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PREFACE

The anniversary volume of SOCIOMETRY owes the form it has to an unusual meeting of ideas. From France and the United States similar trends of thought have sprung, to which these pages give testimony. Social scientists of both countries are united in this volume in the spirit of mutual cooperation to advance the cause of sociometry and microsociology.

EXECUTIVE COMMITTEE
Sociometric Institute

EDITORIAL

There are three kinds of scientific *Symposia*: (1) All authors agree on the same principles; (2) All authors disagree completely; (3) Each author starts from his own point of view, but makes an effort to understand those of others.

The danger of the first kind consists in too much identity; the danger of the second kind consists in the juxtaposition of monologues; the attraction of the third kind consists in the *possibility of reaching the level of dialogues when the contributors succeed in meeting through their research and discussion*.

Let us hope that this Symposium will belong to the third kind and that it will realize the meeting as well as dialogues among contributors of different theoretical and intellectual background, in *their common effort to find an experimental foundation for Sociology*.

The Editor considers his role as a purely honorific one (as a matter of fact, for technical reasons he was not able to read more than three papers in this issue), and he accepted the kind invitation by Dr. Moreno only because this honor was rather addressed to French Sociology than to himself. The real editor of this Symposium is, of course, Dr. Moreno, to whom all responsibility as well as all merit belongs.

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MICROSOCIOLOGY AND SOCIOMETRY¹

GEORGES GURVITCH

University of Paris, Sorbonne

I. PRELIMINARY REMARKS

The concept and term "*Microsociology*" which were initially launched and successively developed by this author in his courses and articles on "Forms of Sociability" (1934-1937)², afterwards in his books and later studies,³ have had the good fortune of meeting with a powerful current of experimental research known in the United States as "Sociometry." The significance of this meeting of ideas, the spontaneity of which can leave no doubt, and which did cause a very sincere surprise on both sides, appears to deserve detailed analysis in order that both parties obtain from it the greatest possible benefits for their work. For, in all good faith, it is not a question here of a useless quarrel about priority in the employment of such an expression or concept, every direct influence being excluded because of reciprocal ignorance. The author does not by any means claim that his effort to develop a microsociology⁴ and to distinguish it clearly from "macro-sociological problems" has succeeded up to the present time in attracting an attention which would be commensurate with the success of sociometry in the United States. However, if he recognizes that microsociology such as he has developed it up to now has many things to learn from the techniques of sociometric research in order to arrive at a possible experimental

¹ Translated from the French by Zerka Toeman (revised by the author). The original appeared in *Cahiers Internationaux de Sociologie*, Volume III, Double Number, 1947, and is here published with the permission of the author.

² See "Analyse Critique de quelques Classifications des Formes de Sociabilité", *Archives de Philosophie du Droit et de Sociologie Juridique*, 1936, and "Essai d'une Classification Pluraliste des Formes de Sociabilité," *Annales Sociologiques*, 1937, Serie A, Fascicule III.

³ See *Essais de Sociologie*, Paris, 1938. *Elements de Sociologie Juridique*, Paris 1940; *Sociology of Law*, New York 1942; see also my papers: "Mass, Community and Communion," *The Journal of Philosophy*, 1941, "Social Control," *Twentieth Century Sociology*, New York 1945.

⁴ This effort was attempted for the first time in my two books *L'Idee du Droit Social*, Paris 1932, and *L'Experience Juridique et la Philosophie Pluraliste du Droit*, Paris 1935, where it was shown that the "We's" and the "Relations with the Other" cannot be identified either with the historic phases of an all inclusive society, or with the particular groupings, which always represent a moving synthesis of several forms of sociability.

verification of certain of its hypotheses, he believes that sociometry in its turn could profit from the findings of microsociology such as he has conceived and practiced it. This, not only to avoid purely quantitative and unilaterally behavioristic misinterpretations, but also to enlarge the domain of its investigations (in passing from "inter-personal relations" to the "We" in its three degrees of intensity: *Mass, Community and Communion*), in order to refine certain of its concepts (such as, for example, the "social atom" and the social group), and last but not least in order to elaborate on certain new research techniques and tests. In short, it is a veritable treaty of alliance and of mutual cooperation between sociometry and microsociology to which this study should like to contribute.

After a first glance, which is very often false, for verisimilitude is the enemy of truth, one could say that the claimed meeting between microsociology and sociometry appears to be a paradox, if not a very great misunderstanding. Does not recourse to the "forms of sociability," inasmuch as they represent moving clousters composing every group, the variety and instability of which leap before the eyes, make clear one of the fundamental aspects of qualitative indetermination of the social network, which resists all application of calculation of probabilities or the laws of large numbers? Microsociology, thus conceived, does it not seem to exclude application of quantitative measure, characteristic of statistics and graphs? Now "sociometry," as its name testifies, does it not want to apply the "metrum" to the "socius." does it not propose "to study with the aid of mathematics the psychological properties of populations,"⁵ does it not consist of "discovering, describing and evaluating social status, structure and development through measuring the extent of acceptance or rejection between individuals in groups"?⁶

Nevertheless, that which constitutes all the originality of sociometry, according to its founder, Dr. Moreno, who does not tire of insisting on this point, is that the measure (*metrum*) is only a technical, very limited means of obtaining better understanding of purely qualitative relationships with the *socius*; these relationships are characterized by their *spontaneity*, their *creative element*, their link with the *moment*, their integration into concrete and unique configurations. "In human interrelations and in human society, the spontaneity of the individual is the alpha and the omega, the crux, of

⁵ J. L. Moreno, *Who Shall Survive?* 1934, p. 10.

⁶ Urie Bronfenbrenner, "The Measurement of Sociometric Status, Structure and Development," *SOCIOMETRY MONOGRAPHS*, No. 6, 1945, p. 4.

every social situation." "The most neglected aspect of social science is the function of the Moment in a social situation or, in other words, the relationship of a social situation to the moment of its emergence." Sociologists are too preoccupied, according to Moreno, with the studies of social processes after they have taken place, in their cooled-off state; the study proceeding, not backwards, starting from acquired results, but forwards, commencing with the basic, emergent state (*status nascendi*) would give better results. "We believe, therefore, that the 'socius' aspect had been omitted from deeper analysis far more than the 'metrum' aspect." That is why sociometry, planning to make use of measurements, graphs and statistics to understand better the creative spontaneity of the social moment and the tense flux of attractions and repulsions combined into the psychosocial networks, implies, Moreno tells us, a dialectic element.⁷ This dialectic element should result in uniting into one and the same procedure statistics and graphs, the interpretative comprehension "of social roles" and of the unique social configurations, as well as the comparison of the analogous social frameworks, strictly delimited.

Among those who claim to be interested in sociometry, writes Moreno, one is able to observe three tendencies: a) Those who are concerned with the "measurement," but who do not realize the qualitative character of that which must be measured, such as, for example, a great many demographers, statisticians and followers of the ridiculous procedures of Gallup who want to establish averages of public opinion in a vacuum;⁸ b) those who are interested in the social spontaneity and the social moment, in social roles, in interpersonal relations, but who do not admit, or hardly so, to any possibility of applying quantitative measurements in this domain; c) finally, those who are the true promoters of sociometry and who have succeeded in conjugating measurement with qualitative comprehension, a conjugation which constitutes the novelty of sociometric orientation.⁹

The technical procedures of measurement which sociometry applies are in themselves of a very limited scope and specially adapted to their delicate subject matter. Thus Moreno and Jennings do not have any dif-

⁷ J. L. Moreno, "Foundations of Sociometry," SOCIOMETRY MONOGRAPHS, No. 4, 1941, pp. 16, 21, 18, 32, and following.

⁸ J. L. Moreno, "Sociometry and the Cultural Order," SOCIOMETRY MONOGRAPHS, No. 2, 1943, p. 318: "We should exclude from sociometry all public opinion research which is based upon the questioning of a number of individuals separate from each other, as for instance the studies of Gallup."

⁹ *Ibid.*, p. 318 and following.

difficulty in recognizing that the "sociometric test" properly stated, that is to say "the quantitative analysis of choices (which are made between the individuals within a group) is of limited value; it appears as an artificial and abstract view of the configurations studied. Structural analysis of the configurations as such gives a better picture."¹⁰ On the other hand, the sociometric investigations make it obvious that the observer-investigator, in order to succeed, must participate himself, together and simultaneously with those whom he observes in the situations studied. "Sociometry has taught us to be pessimistic, critical of all enterprises which try to solve problems without the most intensive participation of the people involved."¹¹ "A significant contribution has been made by sociometry to the concept of the social investigator. It has led to the synthesis of procedures of *observation, of operation, of participation and of action.*" "The social investigator had dedicated himself for more than a century to one extreme, the state of passivity, of passive reception, symbolized in the spectator or observer methods. With the advent of sociometry more and more intensive co-experience with the participants in a social situation was demanded from the investigator and he had at last to swing to the other extreme, to the state of full, unlimited activity, to co-experience through action and interaction, the (social) drama" which was being played before him.¹² Moreno has seen here, in particular, his most cherished idea, and one at which he had already arrived far in advance of having found sociometric procedures: the utilization of dramatic theatrical action, of the "spontaneity theatre" for psychiatric therapy on one hand, for sociological experimentation of social relations and of groupings in formation on the other hand, "psychodrama," "sociodrama," "group therapy," "sociatry," to use his own terminology.¹³ Whether or not one approves of this part of Moreno's work, which he himself seems to consider as the most important, but which is very much discussed by physicians and sociologists (especially by those for whom the psychodramatic and sociodramatic methods are connected with artificially created theatrical presentations), two ideas must be borne in mind here as

¹⁰ J. L. Moreno and H. Jennings, "Sociometric Measurement of Social Configurations," *SOCIOMETRY MONOGRAPHS*, No. 3, 1945, p. 20.

¹¹ J. L. Moreno, "Sociometry and the Cultural Order," *op. cit.*, p. 344.

¹² J. L. Moreno, *Psychodrama*, 1946, pp. 248, and following, 246, 247.

¹³ See *Psychodrama Monographs*, No. 1-19, published by J. L. Moreno; the new journal *Sociatry*, *Journal of Group and Intergroup Therapy*; the *Symposium Group Psychotherapy*, 1945, and *The Theatre of Spontaneity*, 1923, and 1947, a new edition in English.

essential to the point of view of the orientation of experimental sociological research: a) The idea of organizing sociological experiments, while creating, as in physics, artificial and controlled frameworks and conditions (we will see that this experimentation aided by sociodramatic and psychodramatic techniques can be effected in the midst of truly existing groupings and does not need theatrical presentations on a stage); and b) the idea of making, in these sociological experiments, out of the investigators "not only participant observers, but also participant-actors." Whether this role (played by the participant-actor-investigator) is real, fictitious or symbolic, he should endeavor to identify and integrate his portrayal with the mental processes of the subject (whose auxiliary *ego* he plays).

It is precisely this synthesis of genuine experimentation introduced into sociology, with the technique of the participant-actor-investigator, representing interpretive comprehension in its most intensive form, which makes it plain to Moreno that in the research procedures which he proposes "the antinomy between the natural and the social sciences is overcome."¹⁴ This is also the meaning of his affirmation that the old techniques of research "have to undergo a process of *subjectification* in order to acquire a more profound objectivity. This new sociometric objectivity can well be contrasted with the old positivistic objectivity of Comte."¹⁵

To understand the core of Moreno's sociometric orientation, one must also keep aware of the fact that he points out among the principal sources of his inspiration, the Bergsonian critique of spatialised time and the Bergsonian concept of creative activity, the "depth psychology" coming from Freud, and the idea of spontaneous groupings by Fourier and Owen.¹⁶ The critical reservations which he formulates in reference to Bergson and Freud are particularly instructive. Bergson, after his "justifiable refutation of the mathematical, intellectual time construct went too far. With the time clock, the measure of a mechanical moment, he also threw away the *creative moment*. In this fashion Bergson's universe cannot start and cannot relax, it is a system in which there is no place for the moment." Because for Bergson

¹⁴ J. L. Moreno, *Psychodrama*, *op. cit.*, p. 260, 261.

¹⁵ J. L. Moreno, "La Methode Sociometrique en Sociologie," *Cahiers Internationaux de Sociologie*, 2, 1947, p. 88.

¹⁶ J. L. Moreno, *Who Shall Survive?*, *op. cit.*, p. 431, note 26. In his bibliography (p. 436) he cites the work of Fourier, *Theorie de Quatre Mouvements*, 1808. Moreno equally indicates Comte, Le Play and Marx as far as sources of his information are concerned (pp. 5-10); nevertheless, it is only the influence of Marx which is stated with some precision, see notes 27 and 29 of this study.

"one instant is as creative as the other, all instants are resolved in an absolute *durée* of creativity," the result being "a total denial of determinism which is just as sterile as its full acceptance."¹⁷ This last interpretation is the basis of all the difficulties and errors of Freud's psychoanalysis, for whom the "absolute determinism" of psychic life, through the "trauma" always placed in the past "has become a veritable obsession." The reduction of all aspiration, innovation, creation, to determinants through complexes and repressions has eliminated the elements of spontaneity and immediacy from the analysis of psychic depths, and has dissolved the present and future into the past. Moreover, "in refusing to transcend the boundaries of the individual organism, considering the group as an epi-phenomenon of the individual psyche," while "ignoring the transformation of sexual, social, economic, political and cultural relations," as well as "social movements such as socialism and communism," Freud has destroyed the bridge between psychoanalysis and sociology with his own hands. The former when applied to the latter "has become a reactionary force in the social sciences."¹⁸

One can understand that the founder of sociometry, while suggesting the application of quantitative measurement to the spontaneous, the qualitative, to the creative elements which he has found in the social plot, saw himself forced to criticize the Bergsonian negation of any possibility to measure and quantify duration. Nevertheless, it is regrettable that he has not done it in a more precise and consistent fashion. In fact, it is well known that in *Matière et Memoire* and in *l'Evolution Créatrice* Bergson devoted his greatest effort to the description of "intermediate gradations," and has made us catch a glimpse of the *different* "densities of qualitative duration." It is his inveterate tendency towards the continuity and monisme which hindered him from developing this line of thought further and which led him to ignore *the moment* and *discontinuity*, for lack of which, as Bachelard¹⁹ has pointed out before Moreno, Bergsonian thought (when taken literally) becomes inapplicable to scientific research. There is no doubt possible about the fact that sociometry as Moreno conceives it cannot be justified but to the extent to which one recognizes a *qualitative-quantitative time* where different degrees of the qualitative and quantitative combine and limit each other thus producing diverse levels or frames of time. It is there where various compromises between the continuous and discontinuous, as well

¹⁷ J. L. Moreno, *Psychodrama*, *op. cit.*, pp. 9, 102-103.

¹⁸ *Ibid.*, pp. 102-103, 3-8, 315; *Who Shall Survive?*, *op. cit.*, pp. 8, 426.

¹⁹ Gaston Bachelard, *La Dialectique de la Durée*, Paris, 1934.

as between necessity and contingency do arise, compromises which make possible causal determinations, which are always relative and diversified.²⁰ But Moreno does not sufficiently explore this, as well as other theoretic problems (such as the specificity of social reality, the reality of groupings, the structure of the "We", etc., as we will see later), which makes the "foundations" of sociometry a little loose and which does not fail to provoke misunderstandings.

In any case, after this exposition of methodological tendencies and of philosophic sources of sociometry one will not be at all astonished to ascertain Moreno's interest in microsociological elements, as far as they incarnate the most spontaneous, qualitative, instantaneous, creative matter in social life. Already in his *Who Shall Survive?* (first edition, 1934) he has dedicated an entire chapter to "Social Microscopy"; not only did he insist on the fact that sociometric researches should not omit the study of small social units which are as little organized as possible (he himself and his closest collaborators first studied play groups formed by children, prison cells and houses of correction, classes in schools, student fraternities, work teams, neighborhood groups, finally households), but furthermore from the very start he had arrived at the concept of *social atoms*, the combination and the intercrossing of which constituting what he calls groups.²¹ As all the points of agreement and disagreement between sociometry and microsociology, such as we understand it, are concentrated in the discussion of that which represents for Moreno the "social atoms" and "groups," we leave the analysis and critique of these concepts for the second section of this study.

In this preliminary section we merely wish to point out the fact that between 1934 and 1947 the importance attributed by Moreno and his closest collaborators to the sociometric study of "social microscopy" has steadily increased. In 1934 sociometry yet scarcely accorded with the necessity of commencing with the study of minute units; its ambition moved not only towards "the large collectives," but even towards the "whole of mankind:" "If this whole of mankind is a unity, then tendencies must emerge between the different parts of this unity drawing them at one time apart and drawing them at another time together"; and it was simply because "this unity is neither sufficiently known nor sufficiently effective, that sociometric researches should restrict themselves, in the meantime, to make visible

²⁰ See my statement on the books of MacIver and Sorokin, *Cahiers Internationaux de Sociologie*, N. 2, 1947, pp. 176 and following.

²¹ J. L. Moreno, *Who Shall Survive?*, *op. cit.*, pp. 134-157, 141 and following.

the inter-personal attractions and repulsions, commencing with the social atoms."²²

On the other hand, a number of collaborators to the journal *SOCIOMETRY* (founded in 1937), in particular George A. Lundberg, Stuart C. Dodd, Leslie D. Zeleny, Paul Lazarsfeld, and from a certain point of view also Stuart Chapin, to name but the most devoted to the "metrum" and the least inclined to the interpretative understanding of the "socius,"²³ do not show any desire to limit their quantitative studies to the smallest social units and do not appear to think of beginning there at all. It is true that Moreno in his article "Sociometry in Relation to Other Social Sciences" (*SOCIOMETRY*, vol. 1, pp. 213-217) has drawn the attention of his followers to the fact that it was commendable to start with the description of "social atoms" before trying to apply sociometric techniques to the study of large collective units. But it was not until after 1940 that the microsociological orientation of sociometry took the character of a strict exigence.

"Social atom was first a purely descriptive term for a social configuration which was evident in every inter-personal relation system of a community, but we did not then know what dynamic meaning it had in its formation. Only later did we suspect that it might be a basic social unit." "The human group consists of an intricate web of social atoms. This has been shown by experimental and statistical demonstration."²⁴ Helen Jennings, the closest collaborator of Moreno, she too, says: "It was thought advisable to study the smallest structures first, the social atoms. Now, after examining hundreds of these primary units of the social universe as they were found in this community, it appears evident that starting at this base was not only necessary as a next step to an understanding of the social process but a task that must be carried out on a still wider scale than this experiment allows before we can have a comprehensive knowledge of what are, for sociology, significant differences in structure."²⁵

²² *Ibid.*

²³ See George A. Lundberg, *Foundations of Sociology*, 1939; Stuart C. Dodd, *Dimensions of Society*, 1942; Paul Lazarsfeld, *Radio Research*, 1940; F. Stuart Chapin, "Trends in Sociometric Techniques," *SOCIOMETRY*, 1940, vol. 3, pp. 246-262.

²⁴ J. L. Moreno, *Foundations of Sociometry*, *op. cit.*, p. 25; *Sociometry and the Cultural Order*, *op. cit.*, p. 305.

²⁵ Helen H. Jennings, "Sociometry and Social Theory," *American Sociological Review*, vol. VI, No. 4, August 1941, p. 521; *Leadership and Isolation*, 1943, pp. 91 and following, 290 and following.

It is thus that the sociometric movement proceeded in stages towards the view formulated in certain recent writings of Moreno. In his study "Sociometry, Comtism and Marxism" (1945), he wrote particularly: "Sociometry, without however giving up the vision of totality by an inch, has retreated from the maximum to the minimum, to the social atoms and molecules. . . . Sociometry can therefore be called a *microsociology*, a sociology of the microscopic dynamic events, regardless of the size of the social group to which it is applied, small or large. The result of the sociometric development has been that the investigation of the smallest social aggregates has become more interesting than that of the large ones. . . . For the future development of sociometry it may be desirable to separate it as a special discipline and to consider it as a *microscopic and microdynamic science underlying all social sciences*."²⁶ And in his report to the 1946 meeting of the "American Sociological Society" Moreno declared: "We have contrasted the macrosociologies of Comte, Marx, Sumner, etc., with the 'micro-sociologies' (see for this concept, Gurvitch, *Essais de Sociologie*, 1938) among which sociometry is the most conscious representative. . . . We assumed that the study of these primary atomic structures of human relations is the preliminary and indispensable groundwork to most macrosociological investigations."²⁷ . . . "The social revolution based on the class struggle is therefore a displacement from the microscopic to the macroscopic level. Social revolution on the macrosociological level is only *part* of the struggle. Marx was operating on the gross, macrosociological level of events. He often used intuitively near-sociometric ideas, a "macro" sociometrist. He was therefore rarely altogether wrong, but also rarely altogether right. . . . It would be interesting to envision what effect this knowledge would have had upon his theory and method of social revolution. It appears at least that the place of revolutionary action should have been reoriented towards the smallest units of human relations, the social atoms, the primary receptacles of 'preferentiation,' in order to become truly and permanently effective."²⁸

The last statements of Moreno on the link between sociometry and microsociology have become to such a point affirmative that we may perhaps

²⁶ J. L. Moreno, "Sociometry, Comtism and Marxism," *SOCIOMETRY*, 1945, vol. VIII, No. 2, pp. 118-119.

²⁷ "Contributions of Sociometry to Research Methodology in Sociology," *American Sociological Review*, vol. XII, No. 3, June 1947, p. 288; "La Méthode Sociometrique en Sociologie," *Cahiers Internationaux de Sociologie*, 2, 1947, pp. 89-90.

²⁸ *Ibid.*, 95-96.

be reproached with having forced an already open door, seeking to demonstrate in detailed fashion the affinity of the two orientations and suggesting cooperation between them. Nevertheless, we should not jump to conclusions, for, as we shall see, profound divergences will be revealed by confronting the interpretations of microsociology as we have introduced and practiced it for about twenty years, and as Moreno and his disciples have more recently elaborated. On the other hand, the problem of application of the sociometric tests and techniques to the "microcosm of forms of sociability" as we understand them, particularly to the different variations and conflicts of the "We" (ignored by Moreno) within the framework of every grouping, demands for its solution considerable efforts. It is to the analysis of these two principal points that we will devote the second and third sections of this paper.

II. MICRO-SOCIOMETRY AND SOCIAL REALITY

For Moreno and his followers the microsociological elements as starting points of the study of social reality are on one side the "social atoms" and their combination into the "psycho-social networks," on the other side the small groups, groups of minimal size and without formal organization. Now, this view appears to us to arouse critical comments and to lead to certain difficulties.

The term "social atom" itself does not appear to us to be a very happy one, it being well known that under "social atomism" for more than two centuries, were understood the individualistic and contractualistic theories which did reduce social reality to a mere dust of identical individuals. Indeed, as we have had occasion to indicate at different occasions, the error of Hobbes was not to search for the microscopic and irreducible elements of which every real social unity is composed, but finding them outside of social reality, in the isolated and identical individuals. In order to avoid all analogies with these transcended errors of long ago, would it not be necessary first to show how much the research of microsociological elements, for not destroying its proper objective, must remain entirely inherent in the social reality, irreducible to any other reality, whatever this reality be? The contributions of the Durkheim school remain steadfast from this point of view and one cannot refrain from regretting that sociometry does not extend them any consideration. It is in order to make clear that the microsociological elements have absolutely nothing in common with individualism and social atomism that I have defined them in my various writings as the *"multiple ways of being tied together in a whole and by a*

whole or forms of sociability", and that I have insisted on the fact that all the "interactions", "interrelations", "relations with the other" (interpersonal and intergroupal), or "communications" do take for granted the existence of "We"s and are always based on them, it is on the "interpenetrations," "integrations", "direct participations", "parbials fusions" in different "We"s, (actual or virtual). But Moreno and his followers, although they have certainly left behind the errors of Hobbes, have remained, in spite of their own effort, partially handicapped by a latent and unconfessed individualistic psychology which drives them to reducing social reality to interpersonal and intergroupal relations of preference or repugnance ("relations with others") and to tie the "social atoms" to individuals, considering these atoms as characteristic of the most intimate and constant social relations between persons. Thus it could be asked whether the sociometric concept of social reality has gone much beyond the intermental interpretation by Gabriel Tarde, Georg Simmel and Leopold von Wiese. In any case, it becomes evident that Moreno and his disciples give the psychological level of social reality a pre-eminent place and that on this level all interest is concentrated on the "intermental psychology", while neglecting the "collective psychology" proper. Furthermore, this intermental psychology is conceived only in a single one of its aspects, the exclusively emotional aspect, and even more narrowly, as that of preference and rejection (the aspect of *aspiration*, for example, is not sufficiently dealt with). As if other mental functions (intellectual and voluntary functions, in their most varied manifestations and degrees) do not enter into the social mentality and do not very profoundly modify emotional reactions! It is true that subsequently Moreno and his disciples have summoned "social roles" and "cultural atoms" (at first summarily pushed into the background, as "social (and cultural) conserves", obstructing the "spontaneity"); but these concepts, borrowed from other theories²⁰ have not,

²⁰ The concept of "social roles" is due to G. H. Mead and is linked to his theory of the "generalized other." It became popular through the anthropologist Ralph Linton (See, *The Study of Man*, 1936, pp. 113 and *Cultural Background of Personality*, 1945, pp. 77 and following), but the author oversimplified the concept and reduced it, first to the legal aspect of status and rights, and lately to the subjective aspect of all cultural patterns. F. Znaniecki's conception exposed in *The Social Role of the Man of Knowledge*, 1940, p. 118, is far richer than that of Linton and attributes rightly *social roles* to groups as well as to individuals. J. L. Moreno makes fruitful distinctions of enacted or only perceived roles of professional and private roles, as well as of different techniques for measuring social roles and reaches the conclusion that roles always form clusters. (See Moreno, *Psychodrama*, Volume I, 1946, pp. 153-176). The criticism of P.

up to the present, led to the revision of the specific interpretation of social psychology which forms the basis of sociometric research.

Let us face some definitions of "the social atom" given by Moreno and Jennings. "The social atom", writes the former in *Who Shall Survive*, "is the most compact constellation of psychological relations—a sort of individual cell in the social universe. The social atom is formed by the psychological relations of an individual with specific other individuals to whom he is attracted or who are repugnant to him, as well as by their relations to him; these relations are structured around a definite criterion". The social atoms—these "centers of attraction and rejection"—undergo continuous dynamic modifications and can criss-cross in different ways, which gives birth to the "psycho-social networks". As he faces here "reciprocal interactions" Moreno believes that his interpretation "is free from preconception of the contrast between individualism and collectives or corporate bodies. It takes the attitude that beyond this contrast there is a common plane, as no individual is entirely unrelated to some other individuals and no individual is entirely absorbed by a collective."³⁰ Several years later Moreno defined his position as follows: "Sociometry, because of the unity of the human group, studies the human group as a totality. It studies every part with a view to the totality and the totality with a view to every part."³¹ Obviously, one cannot but approve of these declarations and especially of the latter, as general view of the direction in which one ought to search. One will, nevertheless, regret that sociometry has, thus far, neither utilized the suggestions contained in the different theories of the *reciprocity of perspectives* between individual consciousness and collective consciousness,³² nor effectively overcome the exclusively inter-

A. Sorokin against the social roles theory (see *Society, Culture and Personality*, 1947, pp. 39-40, 70-71) seems more justified as far as Linton is concerned, than Znaniecki, and especially Mead and Moreno are concerned. See for my own analysis of the problem my new book *Problèmes de Sociologie Générale* (in press, Chapter II—*La Sociologie en Profondeur*).

(Editorial Note) The "theory of roles" was originated by Moreno independently from G. H. Mead; he introduced it into literature (see "Das Stegreiftheater", 1923, translated, *The Theatre of Spontaneity*, p. 41-43, and "Who Shall Survive?", 1934, p. 324-330) before Ralph Linton published his book "The Study of Man". The term "Cultural Atom" has been coined and its concept formulated by Moreno (see "Who Shall Survive?", p. 144-149 and particularly "Psychodramatic Treatment of Marriage Problems", *SOCIOMETRY*, Vol. III, No. 1, 1940).

³⁰ Moreno, *Who Shall Survive?*, *op. cit.*, pp. 77 and following, 96 and following, 432.

³¹ *Sociometry and the Cultural Order*, *op. cit.*, p. 317.

³² See Charles Cooley, *Social Organization*, 1909, pp. 350 and following; John

mental point of view of interpersonal relations (where the "whole", the "We" the "collective consciousness", properly understood, do not directly appear) in the successive definitions of the social atom which it has worked out.

Let us quote another definition of Moreno's which we find in his paper "Foundations of Sociometry" (*Sociometry Monographs*, No. 4, 1941, p. 24): "As the individual projects his emotions into the groups around him, and as the members of these groups in turn project their emotions toward him, a pattern of attractions and repulsions, as projected from both

Dewey, *The Public and its Problems*, 1927, pp. 13, 186, 191; George H. Mead, *Mind, Self and Society*, 1934, p. 7, 112, 196, 226 *et passim*; E. Farris, *The Nature of Human Nature*, 1937, pp. 155 and following; a certain point of view also F. Brown, *Psychology and Social Order*, 1936, pp. 77, 280 and following 299-300; T. Litt, *Individuum und Gemeinschaft*, 1926, *passim*. In France, Marcel Mauss (see, for example, his famous article "Psychologie et Sociologie," in *Le Journal de Psychologie*, 1924, pp. 899-922); Maurice Halbwachs (See, for instance *Les Cadres Sociaux de la Memoire*, 1924, *passim* and *Les Causes de Suicide*, 1930, pp. 12, 405 and following, 449 and following) and, finally, the author of this paper (see my books mentioned above and also my article "Is the Antithesis of Moral Man and Immoral Society True," in *The Philosophical Review*, November 1943, p. 548 and following) has developed, with different emphases, the thesis of the "reciprocity of perspectives." Here is, in a few words, the form which I have tried to give to this thesis. The I, and Others, and the We are but three opposing poles, inseparable from all conscious psychic life. The I's communicate with the Others principally through the medium of signs and symbols of which the only possible basis are the "We," which gives them effective validity. To wish to separate the I, the Others and the We is to desire to dissolve or to destroy consciousness itself; indeed consciousness cannot but consist in precisely the tensions between these three terms and in their various combinations. As a matter of fact there does not exist in the flow of psychic life, when effectively experimented with, either individual consciousness, consciousness of the other or collective consciousness. What does affectively exist are accentuations of I which can be constructed as a direction towards individual consciousness. There exists an accentuation of the communication between I and the Others which can be constructed as an intermental process, and there exists an accentuation of the We, which can be constructed as a direction towards collective consciousness or collective mentality. These three poles have a sense only as long as they are indissolubly linked. The I and the Others are inherent in the We and the We are inherent in the I and in the Others. Obviously they must be confronted on the same level of depth. For example, I have attempted to show that the three degrees of the We (Mass, Community and Communion) are paralleled by three degrees of depth of the I, and that the pressures which are displayed between the mentioned manifestations of the We correspond to the pressures which arise inside the I. The situation can be also expressed as follows: *Consciousness is a dialectical relationship between I, Others and We, which partially interpenetrate each other and partially converge through opposition.* (See also section III of this paper.)

sides, can be discerned on the threshold between individual and group. This pattern is called his 'social atom.'” If the emphasis of the group element (remaining also undefined) permits a glimpse of the fact that “the relations with others” develop in the midst of social frameworks which cannot be reduced to those relationships, the term *projection* reveals a latent subjectivity, running the risk of leading towards an interpretation of social reality as a phantasmagoria or a fiction.

Helen H. Jennings also gives us definitions of the social atom which do not entirely clarify the situation. In some texts she prefers to replace this term by the “constellation of social relationships which are characteristic for an individual”.³³ “This individual’s constellation of interrelations, when studied by comparison with the constellations of other individuals, has been revealed to be patterned by the choice process in various ways.” In the glossary of her book she defines the social atom as follows: “The constellation of psychosocial projections in positive choice and rejection by and towards the individual as secured under conditions permitting full expression for or against collaborating with others in common life situations.”³⁴

In his study “Sociometry and the Cultural Order” (*Sociometry Monographs*, No. 2, 1943) Moreno appears to us to have made a step forward in his definition of the social atom, taking advantage of the concepts “social roles” and “cultural atoms” mentioned before. After having compared his ideas with those of the Gestalt theory, which he criticizes as being a static interpretation of configurations, Moreno makes a visible effort to join his concept of creative spontaneity with the idea of “dynamic wholes”. He considers the “social atoms” as dynamic and spontaneous frameworks characterized by interaction between its members; these frameworks are rendered more or less stable by a specific distribution of “social roles” and by the integration and absorption of “cultural atoms”. Moreover, he recognizes the impossibility of entirely detaching the social atoms, thus enriched, from “social configurations and from particular groups of which they constitute” “the smallest functional unit”.³⁵

One might therefore believe that the narrow horizon of the “relations with the other” has finally been overcome. Nevertheless disappointment awaits us as we turn to the latest publications of Moreno. In fact, in his book *Psychodrama* (Vol. I, 1946), in spite of detailed and pertinent analysis

³³ *Leadership and Isolation*, *op. cit.*, p. 91, note 1.

³⁴ *Ibid.*, 120 and 219.

³⁵ See Moreno, *op. cit.*, pp. 305-306, 309, 315-317.

of the concept of "the social roles", where he affirms that "the roles do not emerge from the self, but the self may emerge from roles", that "the role can be defined as a unit of synthetic experience into which private, social and cultural elements have merged", and that "roles express collective ideas and experiences,"³⁶ Moreno has not managed to introduce these results into his definition of the social atom. "The social atom", he continues to write, "is the nucleus of all individuals toward whom a person is emotionally related on who are related to him at the same time. It is the smallest nucleus of an emotionally toned inter-personal pattern in the social universe."³⁷ More interesting are the indications Moreno gives in a recent paper on "The Social Atom and Death" (1947). In this paper he indicates notably that "it is the social atom which is the smallest social unit, not the individual", and that the latter "has from birth on already a structure of relationships around him, mother, father, grandmother, and so forth. The volume of the social atom is in continuous expansion as we grow up: it is within it that we live most concretely. . . . These social atoms change from time to time in their membership, but there is a consistency about their structure".³⁸ This could make one believe that Moreno has given up connecting the social atoms with individuals and dissolving them into their interpersonal relationships. Yet, he cannot decide himself to do this and adds: "The social atom is simply an individual *and* the people (near or distant) to whom he is emotionally related at the time. We have shown that these configurations function *as if they would be one unit*."³⁹ This conditional statement clearly demonstrates Moreno's very hesitation between the *fictionalism* and *realism of wholes*, a hesitation which arises out of the fact that he did not start with a sufficiently profound analysis of the problem of the "reciprocity of perspective" between the I, the Others and the We. This fundamental hesitancy is once more revealed in reference to the study of groups. In spite of his above quoted promise to study "the human group as a totality", those wholes "consisting of an intricate web of social atoms",⁴⁰ in spite of the importance which he attributes to "groups" of different types, to "sociodramas", which are first of all efforts of experimentation with the birth and functions of groups, to the "therapeutics of groups", to the interdependence between the functions of groups and their structure, finally,

³⁶ *Psychodrama, op. cit.*, pp. 153-175, 184-203, 345 and following, 354-355.

³⁷ *Ibid.*, pp. 184, note and 229.

³⁸ *SOCIOMETRY*, Volume 10, No. 1, 1947, pp. 80-81.

³⁹ *Ibid.*, pp. 80-84.

⁴⁰ *Sociometry and the Cultural Order, op. cit.*, pp. 317 and 305.

to intergroupal relations, Moreno recoils before the prospect of acknowledging to social groups a reality *sui generis*, irreducible to the elements of which they are composed! Thus, after having reproached Freud for his conception of groups as "simply epiphenomena of the individual psyche", he writes, though not without noticeable embarrassment: ". . . the group is only a metaphor and does not exist by itself, its actual content are the interrelated persons composing it, not as private individuals but as representatives of the same culture."⁴¹

There we see why Moreno and his disciples do not decide themselves to penetrate behind the "interpersonal relations" (I-You-He-They), into the basic sphere of the "We"—those "social atoms" par excellence. There, also, is the reason for microsociology and differential sociography of groupings not being sufficiently distinguished between. In fact, can a "metaphor" be seriously considered as a "microcosm"? The latter would appear to presuppose a genuine unity and not a fiction! How can groups function, struggle one against another, possess structures, form varying hierarchies within and between them without possessing an effective reality *sui generis* and without a certain real equilibrium between the centripetal and centrifugal forces established in their midst. It is, also, difficult to understand how a distribution of "social roles" and an interpenetration of creative spontaneity with cultural patterns can be produced in a fictitious frame.

Is it not obvious that a concept of social reality which is insufficiently clarified and not thoroughly analyzed enters into the sociometric movement in contradiction with its promises and with its results. Thus, it is not in order to fight against sociometry, but, on the contrary, to set free all its self-propelling potentialities, and to make it acceptable to all sociologists, that we point out the necessity for it to improve its conceptual apparatus, in order that its tests can penetrate more efficaciously into social reality in all its depth levels, in all its multiplicity of forms of sociability and of types of genuine groupings.

In order to point out the merits of sociometric tests and measurements, particularly their role in microsociological studies, we have to attempt finding a way for their application to a social reality which is for richer and consists in a microcosm of more complex and varied social bonds, than those which Moreno and his disciples have foreseen. It seems, therefore, necessary for us to recall first in a few succinct theses our own conception of microsociology in its relation to social reality:

⁴¹ *Psychodrama, op. cit.*, Vol. 1, pp. 320, 315, 354; see also Moreno, *Sociodrama, A Method for the Analysis of Social Conflicts, Psychodrama Monographs*, No. 1, 1944.

a) The microsociological elements—the forms of sociability or the ways of being bound in the whole and by the whole—actualize themselves, combine with each other, combat each other and balance themselves in the most varied fashion in relationship to every type of particular grouping and to every type of all-inclusive society where these particular groupings are integrated, as well as to every particular social conjuncture. Every group as far as it is a genuine unit (see § d here under) is a *microcosm of forms of sociability (actual as well as virtual)* and every all-inclusive society is a *macrocosm of particular groupings* whose hierarchy is essentially variable and adapted to types of global societies and to concrete social situations.

b) There can be $n + 1$ forms of sociability, but a sociologist leaves some of them out; the sole justification of this selection and construction of types is to be useful as points of departure for particular empirical researches. We thus did establish (in our previous works), while applying eight different criteria (found in the social reality itself and the majority of which criss-cross) several dozen of forms of sociability. In this study we will limit ourselves to three degrees of intensity of the “We”—*Mass*, *Community* and *Communion*, and to three degrees of intensity of “relationship with the other”: relationships of rapprochement, separation or a combination of both. In every particular group, no matter how small it may be, there become actualized, opposed and balanced not only these 6 types of microsociological bonds (and many others besides) but also different concrete manifestations of the same type. For example, in a group as small and as simple as a family household composed of father, mother and two children (where there are actualized at different times and under different circumstances now the Mass, then the Community or by Communion, as well as relations of rapprochement, separation or the combination of both) can, at the same time be observed tensions and conflicts between a *plurality of We's*: the “We” of the children against the “We” of the parents, the “We” of the mother and one of the children against the “We” of the father and that of the other child, etc., each of these “We's” taking moreover different degrees of intensity.

c) The microsociological elements or the forms of sociability, similar to the particular groups and to all-inclusive societies, do not in any way depend exclusively upon collective and intermental psychology or behavior. They are microsociological manifestations of “total social phenomena” (Mauss) in all their depth levels; they imply the vertical pluralism of depth layers characteristic of all social reality. Thus every form of sociability manifests itself in a number of levels, starting with material objects, tools, ges-

tures passing through practices, patterns, symbols, roles, attitudes and reaching innovating and creative behavior, collective ideas and values, and, finally, mentality collective and individual at the same time. It is always the whole of these interpenetrated levels that the sociologist has to keep in sight, utilizing for the study of different branches of sociology, as a point of departure, now one depth level, now another; microsociology can not be here an exception! Furthermore, inasmuch the collective mental life is concerned of which the inseparable poles are the I—the Other—and the We, it would be inadmissible to reduce it to emotional acts of preference and repugnance. All the mental functions participate in social reality: intellectual functions, be they acts of intuition, judgment, or states of memory, imagination, representation, etc., as well, as will and emotions of different kinds and degrees.

d) The particular group—that microcosm of forms of sociability—represents a real, specific unit, more real than the elements of which it is composed and to which it can not be reduced by any procedure, in the same sense as inclusive society, into which this group is integrated is more real than all groupings, and can not in any way be reduced to the macrocosm of groupings which compose it. The group is a kind of collective unit, more concrete than the forms of sociability and more abstract than the types of all-inclusive societies. *The group is a genuine collective unit having a common task to accomplish based on common social attitudes and expressing itself in collective behavior; all these elements do create an externally observable framework, within which a certain mobile equilibrium is established where the centripetal forces dominate over the centrifugal forces.*

e) If it is not possible to study a particular group with some precision, on one hand without integrating it into an inclusive society (because every concrete group changes in character—that is, in function and structure conforming to the type of inclusive society in which it is placed) and, on the other hand without analyzing its concrete conjuncture of forms of sociability which contributes to constitute it, this conclusion follows: *It is as impossible to develop a microsociology without the differential sociology of groupings and of the typology of all-inclusive societies, as it is impossible inversely, to develop a macrosociology without a microsociology.* In other words, these different planes or aspects of sociology are reciprocally founded and controlled by each other and can only relatively, partially and technically be distinguished but not entirely and substantially.

The sociometric tests represent but one of the possible techniques of sociological research; it may very well be that it is adaptable only to the

microsociological domain and, perhaps, partially to that of differential sociography of groupings. If this hypothesis were to be found correct, this would certainly not relieve the representatives of sociometry of the imperious obligation always to bear in mind the indissoluble interdependence between forms of sociability, particular groupings and all-inclusive societies, taken as concrete objects of empirical studies.

We will now try to indicate how the various sociometric tests can be applied and adapted to the study of microsociological aspect of social reality such as we understand it, in particular to the finding out and description of the "We's" and of their three degrees: Mass, Community, Communion, as well as of the tensions and conflicts between the different "We's" within the same particular group.

III. THE SOCIOMETRIC TECHNIQUES ADAPTED TO THE STUDY OF THE "WE'S" AND OF THEIR DIFFERENT DEGREES

The sociometric techniques as they have been applied up to the present, consist of various tests permitting the measurement of "the non-official and informal relations" of emotional character existing within groups and between groups. These measurements lead to the possibility of establishing "coefficients of attraction (prestige) and of rejection (isolation)," characterising the social position of individuals, more precisely "the structure of their social atoms"; this kind of coefficients also bear upon "the intercrossing of social atoms," "the psycho-social networks," "the real structure of a group" and upon "the concrete social configurations." Among the different sociometric tests, we will choose the following three as being the most important for the problem with which we are going to deal here, the adaptation and application of sociometric techniques to the study of the "We's" and of their various degrees: "the sociometric test" proper, "the social configuration test" and the "sociodramatic test."

a) Among these tests, the *sociometric test proper* has been most frequently applied up to now and has given the most appreciable results. The simplest example of this test is as follows: the children in school are asked to choose freely those of their classmates whom they would prefer to sit next to in the classroom. The choices thus made are counted and coefficients are established, showing that certain children are preferred, others are neglected or isolated, and a third group of intermediaries represent the average-chosen. The choices are very often made without being aware of the reactions of the "stars" or "aces" with regard to those who feel attracted to them. Or, to give other examples, one proposes to those detained in a

prison or in a reformatory school, to choose freely their cell or room mates. Or again, one asks some miners to choose the members of their work shift themselves, and the inhabitants of a neighborhood or the tenants of a large building, to set up lists of desirable and undesirable persons, etc.— It is obvious that the actual contents of the test will depend upon the character of the group to which it is applied and that the choices (and consequently the coefficients specifying the position of the members) will vary according to the criterion involved in the choices (living together, working together, worshipping together, studying or playing together, etc.). Thus the coefficients of attraction and rejection might vary within the same group if they have been based upon the different criteria. For example, children in a school are asked to answer the following four questions: I—With whom, among your classmates, would you prefer to do your assignments? II—With whom would you prefer to play? III—With whom would you prefer to sit during school hours? IV—With whom would you prefer to live? The experiments made have shown that the choices effected were related, at least partly, to different criteria⁴²

This result not only makes obvious the importance, apart from spontaneous reactions, of routines, cultural patterns, values, etc., in the microsociological sphere itself (not to mention the influence of the social situation of the parents, of their consciousness of class, etc.), but it reveals moreover the impossibility of considering the choices as exclusive manifestations of emotionality, the intellectual functions, representations, concepts, ideas, etc., entering into the process of choice itself *as a function of the criterion used*. Some of these criteria can even introduce elements of utilitarian calculation into the answers to the sociometric tests (for example: selection of the best students or the smartest for companions, with a view to doing the assignments together, etc.)

Moreno and Jennings have clearly drawn up the rules which should govern the sociometric tests. Here are the chief ones: "a) A specific number of choices is established according to the size of the group to be tested; b) A specific criterion is used, varying with the functional activity of the group; c) Different levels of preference are to be specified for each choice (1st, 2nd, etc.)."⁴³ The actual sociometric researches made on the

⁴² See Urie Bronfenbrenner, "The Measurement of Sociometric Status, Structure and Development", *Sociometry Monograph*, No. 6, 1945, which exposes the results of experiments made in various schools, applying the first three criteria and resulting in quite different coefficients.

⁴³ Helen Jennings, *Leadership and Isolation*, *op. cit.*, p. 18 and following. J. L.

basis of these rules have shown that the "chosen" and the "neglected" are not chosen or neglected as much for their personal qualities as for their adaptation to the particular "functions" and "roles" which a group needs most in a specific social configuration.⁴⁴ This conclusion, based on factual experimentation seems to us to go noticeably beyond the theoretical premises of the sociometric school, demonstrating the irreducible reality of groups and of the We's which are integrated into them, in regard to interpersonal and intergroup relations, the "relations with others," reveal themselves strongly conditioned by the wholes in whose frame or on whose base they are realized and developed. This is probably the reason why the founder of the school and his collaborators have been led, very early, to complete the sociometric test proper with the "social configuration test" and the "sociodramatic test."

b) *The social configuration test.* ". . . An essential form of statistical treatment (in sociometric study) would deal with social configurations considered as "wholes," and not as single series of facts, more or less artificially separated from the total picture." . . . "Indeed, quantitative analysis of choices is of limited value: it appears as an artificial and abstract view on the totality of the configurations studied. Structural analysis of the configurations as such would give a more precise picture."⁴⁵

The social configuration test consists of comparing the mathematical probability of positive and negative choices (as well as unreciprocated choices) and those choices actually made. The discrepancy between the two renders manifest that "social configuration" which precisely causes the deviation of the real coefficient, established post factum, from the

Moreno, "Sociometry and the Cultural Order," *op. cit.*, p. 327: "The requirements of a good sociometric test are: a) that it reaches and measures two-way relations; b) that the participants in the situation are drawn to one another by one or more criteria; c) that a criterion is selected to which the participants are bound to respond, at the moment of the test, with high degree of spontaneity; d) that the subjects are adequately motivated, so that their responses may be sincere; e) that the criterion selected for testing is strong, enduring and definite and not weak, transitory and indefinite."

⁴⁴ Helen Jennings, *Leadership and Isolation*, *op. cit.*, pp. 44 and following, 66 and following, 135 and following, 203 and following, 210 and following; J. L. Moreno, *Psychodrama*, Vol. 1, 1946, *op. cit.*, pp. 84, 153 and following, 320-352, 364 and following.

⁴⁵ Moreno and Jennings, "Sociometric Measurement of Social Configurations, based on Deviation from Chance" in *Sociometry*, Volume I, 1937-38, *Sociometry Monograph*, No. 3, second edition, 1945, pp. 7 and following, 18 and following; first edition

coefficients calculated on the basis of the probability theory.⁴⁶ If this deviation yields for the positive and reciprocated choices a superior coefficient to that which was foreseen by the mathematical calculation of probabilities, then we are dealing with a social configuration which tends towards cohesion and consistence. If, on the contrary, this deviation is shown by inferior coefficients to those which the probability calculation indicated, we are dealing with a social configuration which tends towards disintegration. That is why Moreno expresses the hope that this test, while being developed, would be able to contribute to the study of "integration and disintegration of groups."⁴⁷ A follower of Moreno's, Urie Bronfenbrenner, writes about perspectives open to the "social configuration test" in the following terms: "The concept of deviation from chance expectancy provides a basis for the setting up of indices which may be used for the measurement and comparison of social status of the degree of coherence within social groups and the intensity of cleavages between groups. The sociometric definition of social status and structure in terms of deviation from chance expectancy . . . permits the identification of trends otherwise obscured."⁴⁸

One may, perhaps, raise the objection that this second test can not be applied but to the study of groups, it is within the differential sociology of groupings, and not to the study of forms of sociability, to microsociology. We answer that this objection does not appear to be justified except if one presumes that all microsociological elements are reduced to "relations with others," to "interpersonal and intergroup relations." Moreno would probably say that besides these relations he includes into microsociology the numerous "psychosocial networks" which play the role of "social molecules" to which the configuration test is applicable. Another fact seems to us more important: among the microsociological elements can be observed the presence of "We's," of interpenetrations, integrations, partial fusions, to which the "social configuration test" should become fit for, given that the "We's," if they acquire a certain stabilization, can be considered as configurations, at least virtually. We will see, in fact, that this test, integrated into the technical procedures specially adapted to uncover and measure the tensions and conflicts between the various We's

⁴⁶ *Ibid.*, pp. 7-16, 20-21, 32-24.

⁴⁷ J. L. Moreno, "La Methode Sociometrique en Sociologie," *Cahiers Internationaux de Sociologie*, Vol. II, 1947, p. 96.

⁴⁸ Urie Bronfenbrenner, *op. cit.*, p. 73.

inside the same group, as well as the various degrees of intensity of the We's can be useful in this research field, as well as in that of the sociology of groupings.

c) *The sociodramatic test.* The procedures of "psychodrama" and "sociodrama" have been elaborated by Moreno even before he worked out sociometry. It is his medical interest which have led him to them, as a method of individual and collective psychotherapy. Furthermore, Moreno directs two psychotherapeutic theatres (at Beacon and at New York). It is but later that these procedures have been employed as sociometric techniques in themselves. "It is amusing to think that the ancient Melpomene should come to the rescue of modern sociology; I am not referring to the drama as a conventional cultural tradition, but the drama as an experiment in spontaneity research." . . . "The dramatic deep action methods are divided into two categories, (a) the *psychodrama* which deals with interpersonal relations and private ideologies, and (b) the *sociodrama* which deals with intergroup relations and with collective ideologies." The two "are able to present the social process in its formative phases, in more dimensions, and more vividly than any other method known." Thus "sociodrama returns to the *statu nascendi* of these deepest social realities unflavored yet by art and undiluted yet by intellectualization." At the same time "sociodramatic procedures are able to externalize and objectify cultural phenomena (which otherwise remain invisible). An "axio-normative" order as it functions within a social system and is used by its participants in evaluating each other and the system, can be portrayed, *tested* and measured." It is thus that in a sociodrama we can experiment with the complex relationships between creative spontaneity and cultural patterns and stereotypes. Finally, "sociodrama is introducing a new approach to anthropological and cultural problems. . . . The underlying concept is the recognition that *man is a role-player*, that every individual is characterized by a certain range of roles which dominate his behavior, and that every culture is characterized by a certain set of roles which it imposes with a varying degree of success upon its membership." From this viewpoint "the sociodrama represents a frame of reference for measuring roles" (for example, of husband and wife, of parents and children, employer and employee, management and worker, stranger and native, rulers and subjects, whites and blacks, etc.), Moreno concludes that the sociodrama "provides all the trappings of a human society in miniature, the people in the audience represent public opinion; the people on the stage represent

the protagonists; the director (who orchestrates the drama) symbolizes the action of the group."⁴⁹

The Moreno's "sociodramatic test," as we can see, concerns more the macrosociological aspect of all-inclusive society and of the particular groupings integrated into it, because it is especially their problems which are dealt with in the "sociodramas" organized by Moreno. Moreover, although he and his followers speak of "measurement," the frames of which are provided by the sociodramas, the results achieved up to the present are reduced to graphic designs (sociograms and role diagrams) which have rather more the character of an illustration and are not expressed in coefficients and by probability calculations.

We have the impression that the "sociodramatic test" is the least developed one from the sociometric point of view, in spite of the great, if not predominant, interest which Moreno devotes to it. This is evidently largely related to the fact that in this area the physician in Moreno supercedes the sociologist. However, this paradox could also be explained, at least partially, by the already noted fact that Moreno does not find the "We's" inside groups and hesitates to consider the genuine reality of groupings. If such a step were taken, the "sociodramatic test" could be, as we shall see, very usefully applied to bring to light and to render observable the different "We's" which enter into conflict within a group, as well as to try to measure them. To obtain this result two conditions appear to us to be indispensable: a) the sociodramatic procedures must be combined with other tests, for example, the "social configuration test," and the "sociometric test proper," i.e. that these procedures must not be used but as a step in more thorough experiments and researches; b) it is necessary to give definitely up, as far as sociometric studies in sociology are concerned, the creation of artificial groups and relations on the theatrical stage, but instead sociodramatic techniques have to be used for the study of groups and of social relations actually existing, within their proper framework and in a manner inherent to their effective functioning.

Nevertheless the very idea of experimenting with the origin and formation of groupings appears very interesting to us. Indeed, as in all

⁴⁹ J. L. Moreno, *Psychodrama*, *op. cit.*, p. 246 and following, 352 and following, 364, 247 and following, 354-355, 340 and following; see generally p. 315-383; see "Sociodrama, A Method for the Analysis of Social Conflicts," *Psychodrama Monographs*, No. 1, 1944, *passim*, and *Group Psychotherapy*, A Symposium, pp. 188 and following; *ib.* Zerka Toeman, "A Sociodramatic Audience Test," pp. 161 and following.

experimenting, if it would be possible to realize such an enterprise, it would place the groups in the process of formation under artificial conditions and for that reason, controllable and observable with maximum precision. But in order to do this it is necessary to think, not of imagined groups, embodied in the course of a play, but of the groups which had a hard battle to sustain for existence, no matter how long, against powerful and unpredictable obstacles, such as groups of pioneers, explorers, rebels, "partisans" (during the second world war in Russia and Yugoslavia), of "resistants" (in France and other countries which suffered the severe trial of occupation) etc. This subject, fascinatingly interesting though it be, is entirely beyond the scope of this study.

We now believe we are in possession of all the necessary elements for attempting to examine how the three sociometric tests which we have just analyzed, could be modified and combined for both the quantitative and qualitative microsociological studies of the "We's" within groups.

The "We's", the interpenetrations and partial fusions, and especially the passive We's (which we have distinguished from the active We's)⁵⁰ are more often unconscious or half conscious than the "relations with others." They are also (as a general trend, anyway) more spontaneous, since they have less need of intermediary signs and symbols to which they supply in principle, a basis. They are, also, often more rich in content, more penetrated by collective ideas and values, traditions, aspirations, than is the case with interpersonal and intergroup relations. Therefore, to reveal the We's within a group and make them available to observation and verification it is necessary to resort to experimental methods both more efficient and more complex than those which sociometry employed up to the present. We suggest, by way of example, the following tests, whose value could not be judged but by the results obtained after numerous experiments:

1. *The Combined Scission Test.* This test is the closest to the "sociometric test proper." In order to find out the various "We's" within a group and make them available for observation, its members could be placed before the exceptional case of inevitable scission while forcing them to a radical choice. It could be told to the group, that for this or that major reason, it must be divided into two or three entirely separate groups and each member would be asked to indicate to which of the new

⁵⁰ See *Essais de Sociologie*, *op. cit.*, pp. 49 and following, *Sociology of Law*, 2nd edition, 1947, London, pp. 166 and following, 190 and following.

groups (composed of such and such persons and succeeding the discontinued group) he would like to belong. In order that the answers could more or less correspond, one should, after having asked this question, allow a certain time lapse for the discussion and resolution so that the members may agree as regards their voluntary integration in the newly foreseen groups.

The inherent difficulty in an experiment of this kind within any group (whether we are dealing with a class in school, a vacation camp, a work or sports team, a factory, an office, a university college, an orchestra, a club, a trade-union, etc., and even more so a family) is that cases of real scission are evidently very rare, and it would be necessary either to say to the members: "Suppose that in case of absolute necessity your group has to be broken up" or perform a play *comédie* before them (if one wishes, a "sociodrama") dealing with inevitable dissolution. Both procedures would involve serious disadvantages. Indeed, by using the conditional the risk is taken of not always obtaining sufficiently serious and sincere answers; and by using a lie, the test can never again be repeated in the same group, whereas this periodic repetition would be highly desirable.

Furthermore, in both cases the "scission test", to be effective, should be combined with a double use of the "sociodramatic test": sociodramatic account of the reasons for the inevitable dissolution of the group, with all its members taking part in the discussion, and sociodramatic debate between the members of the new groups in formation, before giving their answers as regards their decision of belonging (to the new group). The "social configuration test" could then come in to complete the first two tests, only if the "scission test" were periodically repeated within the same group, for one could not calculate the probability of answers for the purpose of subsequently establishing the deviation, except by going on the basis of the results of a previous experiment.

In spite of the difficulties inherent in this "combined scission test"—the most important of these is perhaps that the "We's" which are in the making and which are conflicting within a group do not do so all the time but as a function of concrete circumstances of the group life which is being dissolved precisely by the procedure in question—it appears in a large number of cases perfectly apt to reveal and permit to measure the "We's" which oppose each other more or less intensively in a genuine, collective unit. The more the "We's" are active and the tensions between them manifest, the more the "scission test" becomes applicable without running into serious obstacles. But even while these obstacles arise,

the "scission test" can continue to be useful, supposing that it be used jointly with the other tests which we will now suggest.

2. *The Opposed Collective Evaluations Combined Test.* It could be attempted to establish and measure the "We's" within a group while arousing periodic discussion in the group, dealing with acute problems in which would be implied "taking of sides", capable of revealing common attitudes regarding some values and even the collective acceptance or rejection of entire scales of values. These discussions could be ended by votes in favor of the chief answers provided by the proposed questions. The sociodramatic test would be very useful here to introduce the debate, for in order to avoid standardized responses, superficial or artificial answers, the experimenter should first succeed in provoking spontaneous and strong reactions from the members of the group brought together. It would be desirable in dramatizing as much as possible some situations and acts, to place the group members before some alternatives, preferably chosen in the life and the very functions of the group in question; by stages the experimenter could complete and deepen these alternatives, linking them up again with ideological conflicts and others which are unfolded in the all inclusive society in which the particular group is an integral part. As to the first point, one could, for example, in a high school class or in a university course accessible for a limited number of students, in a summer camp, or better still, in a student's association, in a club, in some youth organizations, in parishes, in welfare organizations, and if possible in labor unions and factories, arouse discussions and votes on rules of the group's conduct, either referring to such and such critical circumstance (conflicts springing up between some of the members, between management and workers, threats of dissolution, of breaking up, of exclusion, etc.) or concerning the granting of preference to such and such extracurricular activity (excursions, entertainment, instruction, etc.). As to the second point, the experimenter could provoke, in certain groups, true sociodramatic conflicts, submitting to the appraisal of members by way of discussion and of vote, actual, past and future events, likely to unleash violently opposed reactions (for example in France, a planified versus a liberal economy, the Western Block and the Atlantic Pact, relations with the U. S. A. and with the U. S. S. R., the position of General de Gaulle, the attitude of the Communist Party, etc.; the problem of amnesty, the resistance versus collaboration). This would allow, in certain groups, especially those *possessing* a sufficient cohesion independent from the points under discussion, the freeing and measuring of latent "We's" which confront each other and which gain, through those

circumstances, so to speak, an opportunity to manifest themselves and to be mutually accounted for.

The results of the "opposed collective evaluations test" would be, in any case, far more interesting, from the sociological viewpoint, than the absurd establishment of averages of "public opinion" in a vacuum, such as the ridiculous procedures of Gallup and of his American and French followers, whose defeat during the last Presidential election in the U. S. A. can be considered as a success for scientific tendencies in sociology and sociometry. The test suggested would penetrate in the two actual social frameworks: the concrete group and the "We's" inside a group and the fluctuation of intensity of tension between them.

However, this second test which we are suggesting for experimental purposes also implies serious drawbacks. First, it is not equally applicable to all groupings; groups which are as important as labor unions or factories do not lend themselves to it except with great difficulty, for quite obvious reasons, and they can not, under certain circumstances, lend themselves to it at all, which is always the case with groups such as political parties and the churches. Further, this test concerns merely attitudes and not actions and conducts proper, it concerns the passive "We's" and not the "active We's", which are the most important in group life and especially in its organization.

3. *The Efficient Collective Activities Combined Test.* This test would consist of the distribution of several common tasks among the members of a group, tasks which seriously engage their responsibility and which can only be accomplished by cohesive teams, formed freely by them. Here the experimenter could, according to the number and size of the teams formed which prove themselves capable of functioning without clashing, as well as to the degree of efficiency of these various teams, lastly to the fluctuations of respective degree of fatigue and courage in each team, measure the active "We's" held in abeyance in a group.

This test presumes, as do the preceding ones, a combination with the sociodramatic test, equally necessary for provoking the free formation of teams conscious of their tasks, as, after the work is done, comparison and discussion of the results of the various teams' efforts and their respective merits. Here again, the "social configuration test" could be combined with periodically repeated experiments within the same group, to point out the fluctuation of the "We's" in the group under study, while having the advantage of observed deviations as related to probability calculation.

The "efficient collective activities combined test" would be particularly

easy to apply to a group of boy scouts, to a settlement or holiday camp, to a student's club, etc. Furthermore, a philanthropic society, a parish, a government office, a factory, especially a work cooperative or a "work community", lend themselves without serious difficulties to tests of this type. They should therefore be tried out on a very large and varied scale. The drawback of this test is its limitation to a single aspect of the "We's": it reveals and helps measure the "We's" rather as centers of concentrated efforts, than in the totality of their functions, contents and manifestations.

The three tests, the "combined scission test", "the opposed collective evaluations combined test" and "the efficient collective activities combined test", designed to help in the revealing and measuring of the "We's" within a group, are obviously suggested here merely as examples. Many others and probably more valuable ones could be made in the course of the very research work, and only the success of their application could be their justification and the basis for improvement. We wish merely to indicate by these hypothetical examples that the sociometric procedures could be led into the investigation of a microsociological field more vast and more complex than the one which has been studied so far. It seems to us desirable to close our study with the suggestion of a test for the measurement of *degrees of intensity of the "We's"*.

4. *The test of instantaneous or hesitant participation, and of full or partial integration in "We's"*. The tests of which we have outlined the skeleton do not appear to be able to be used directly for the investigation and the measurement of degrees in the intensity of partial fusion in the We's: the Mass, the Community and the Communion. These degrees of We's are particularly unstable, fluctuating and fluid. The passing over into the "We's" from the Community to the Communion or to the Mass is sometimes brought about instantly and thanks to variable and unpredictable circumstances. One might wonder whether the degrees of We's do not break free of all sociometric measurement for that very reason. We do not believe so. Certain manifestations of these fluctuating intensities of interpenetrations can apparently be captured by measurement, at least in part. Indeed, we have always insisted upon the relation of *inverse proportionality* which exists between the *intensity of fusion* and the *force of pressure* exerted by the We on the Ego which are integrated therein. We have attempted to demonstrate in our various studies that, more intense the fusion was, the weaker was the force of pressure exerted by the We on the Ego. On the contrary, the *force*

of attraction exerted by the We on the Egos which are integrated therein is found in a relation of *direct proportionality* with the intensity of fusion. In other words, the pressure being found maximum when we are dealing with the least intensive and the least deep fusion—the Mass—and the attraction being at a maximum when we are dealing with the most intense and the deepest fusion—the Communion. It is exactly those forces of pressure and of attraction exerted by the Mass, the Community and the Communion which can be captured, at least partially, by sociometric measures.

In order to succeed, each of our three tests (of scission, of evaluation, and of efficient activities) should be completed by a fourth test which we suggest calling "the test of instantaneous or hesitant participation, and of full or partial integration in We's" Indeed, in these three tests the participants in the different "We's" which have just revealed themselves as such, can be questioned immediately or after a sociodramatic preparation, to find out *whether their decision to participate was instantly achieved, at one stroke or after some hesitation; if this hesitation continued after the decision was taken if, in other words, after having become participants they considered themselves as integrated entirely, fully, in the corresponding We, or, on the contrary, only partially; finally, if they considered themselves only as partially integrated, what was the aspect or criterion of that integration.*—Those who will answer that they instantly were driven to participate, at one stroke, without any hesitance whatsoever, feeling themselves lead or carried away, so to speak, by a spontaneous wave and considering themselves as totally, fully integrated, render manifest the element of *Communion* in the We concerned; they do not experience any pressure coming from this We or hardly any, but feel primarily its attraction. Those who will answer that they decided to participate after having hesitated and thoroughly reflected, but that their reserve more or less disappeared after the joining was done, and that they felt integrated, if not fully, at least through several aspects of their self, will represent the element of the *Community* in the We concerned; they feel a considerable attraction exerted by the We while also sensing a no less great pressure from the "We". Finally, those who will answer that they have joined only after very long and painful hesitation and that their caution reappeared or remained after joining and that they feel integrated only in a single aspect or according to a single criterion, the most important parts of their self having remained untouched by this integration will represent the *Mass* element in the We concerned.

The questions used, whose general character we have indicated, will obviously be varied, bearing in mind the particular kind of test with which the suggested procedure will be combined. The instantaneous or hesitant joining and the full or partial participation and integration, when it concerns either a new group in formation (scission test) or scales of values collectively accepted or rejected, as opposed to other scales of values (test or collective evaluation) or lastly the efficiency of collective efforts involving work efforts or acts of transformation and creation of different kinds (test of efficient activities) will, obviously, take different forms. But their essential structure remains the same and it is desirable to submit this fourth test to the trial of various experiments in order to develop it in a more concrete and highly differentiated manner; indeed we could give here only a blueprint of this test. If in this manner it could be succeeded to record and measure certain manifestations of Mass, Community and Communion in the We's which face one another in a group, some sociometric implements, very much improved, will most probably be invented along the way, profiting by the accumulation of concrete microsociological experiments. Our suggestions are formulated only to start experimental research in this field.

Moreover, no single technique of investigation in sociology is sufficient in itself. The sociometric technique (the whole set of tests applied or which should be applied) can but represent a *moment*, a step, a turning point, a landmark in microsociological research, besides a number of *other techniques* which must complete, support and limit the first. It appears to us without a doubt that the most perfected sociometric measurements will never succeed in covering and in expressing all the richness and all the deepness of the microsociological field; the comprehensive interpretation of qualitative contents, among several other procedures, keeps here its rights, in as much as it can be precisely controlled, verified and limited, at least in part by measurement and statistics. All that we desired to point out in this paper is, that there is a threshold where microsociology in our sense, and sociometry, in the sense of Moreno, meet and could usefully cooperate, supporting and completing one another. Modifying the well known adage of Kant, we could conclude: *Sociometry without microsociology would become a vacuum and microsociology without sociometry would become blind* (in the sense of a race in the dark, deprived of objective experimental verification).

SOCIOMETRY AND PSYCHOLOGY

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Between an empiricism which found delight in brilliancy, unceasingly renewed by living experiences, and the temptation to bring the world's diversity into agreement with some great principle—between the complementary charm of an unstable disorder and of a static order, of our emotion and of our logic—it is a difficult task, contrary to all our customs, all our weaknesses, to ask for universality in diversity, to explain without destroying, to understand without erring, finally to determine the cleavages of a cohesive pluralism.

That is why I will be permitted to doubt in the results of this balance sheet according to which the problem of the relation between psychology and sociology is solved.¹ We may rest for a while. We may regain our strength at the origins of a so-called simple experience, a thought wearied by too many deep speculations concerning what is specifically psychic and what specifically social. But it is not so easy to place the individual, as such, in terms of his conditions of biological and sociological existence.

The logic of identity, the need of reduction awaits us. Either the individual is confirmed in an inalienable principle, the concrete reality of an individual explains all human reality, explains it while reabsorbing it; and all specificity of the social vanishes then like a mirage, as the vanity of a metaphor, or else the individual is brought down to the expression of his physical and social decisions, to his simplest expression, to be nothing but the point of intersection of cause and effect; and his last sign of life is soon lost in the anonymity of biological rhythms.

Existence without conditions or conditions without existence. It is all or nothing.

Because of this ever-present interest in studying the social and the individual in their reciprocal relations, but also because of the difficulty of such a problem, the recent development in sociology shed a new light on the matter: sociometry of J. L. Moreno, in which the individual in as many

¹ *Twentieth Century Sociology* (published under the direction of G. Gurvitch and W. E. Moore, New York, 1945).

*Editorial Note: The individual may have membership in many social atoms, however, each social atom is sociologically a configuration per se, itself not further divisible.

social atoms* appears to us as the original creator of all human institutions; microsociology of Georges Gurvitch in which the *we* (taken in the dialectic gear of the depth levels and affirmed as irreducible to the relations with the other) are considered as primordial unities;² lastly, a general tendency of American sociologists to "atomize" sociology in order to rediscover, at the level of the individual or of some small groups, the explanatory principles, the organizing forces of more complex and more comprehensive social realities.

However, I am not certain that the spontaneous convergence of the works of Moreno, oriented towards an atomic sociology and those of Gurvitch, oriented towards a pluralistic sociology, would not permit considerable disagreement: the discord of the philosophical American tradition, always pragmatic, not anxious to determine limits and to crystallize concepts, with the French sociological tradition marked by the systems of Auguste Comte but still more by the intellectual strength of Durkheim, whereupon it is difficult for a French sociologist not to consider the social as a reality *sui generis*.

Whatever it may be it is the convergence of sociologists towards a microsociology which interests us psychologists at a glance, a convergence which is so much more revealing as it originates from many and different types of inspirations. Does not this convergence of sociologists among themselves lead them towards the deepest level of social realities, to join again the seekers who, in an opposite direction come from psychology?

Microsociology is not defined merely by the smallness of the groups which it surveys: it is not a sociology in miniature. Here, as in physics, the transition from macroscopic to microscopic, the change of scale is translated into a qualitative change; in any case it demands from the observer a new attitude for a new vision of things. Microsociology is in search of the world in its perpetual creation, in its primary formation, at the moment when individuals contrive among themselves the webs of friendships and of rejections, at the moment when man is no longer an animal and not yet an automaton; the world in which social reality has not yet grown cold and crystallized into stereotypes, on the level where the individual and society form themselves into a mutual relationship. Thus it becomes a question of understanding the consubstantial union of the individual and

² G. Gurvitch, *Essais de Sociologie*, Paris, 1938. The work in which G. Gurvitch has defined his idea of the "we" for the first time was dated 1932: *L'idée du Droit Social*, Paris.

the social, and at the same time the formation of their irradicable originality, before reality congeals, before the divisions take place.

In fact, it is not these theoretical considerations, but the very needs of scientific research and pedagogic organization which have led me to make use of the sociometric techniques.

The experiment was undertaken in several, very different environments, on the one hand a children's home organized for the purpose of dealing with their social maladjustment, on the other hand, the normal population of about forty schools located in the Paris districts: (nursery schools, public schools and high schools) numbering about 20,000 pupils, boys and girls from 2 to 18 years, with whom our laboratory carries on a kind of psychological tutorship since 1946. In behalf of these schools my collaborators have undertaken to study from a sociogenetic point of view the evolution of configuration from class to class, and the comparison of these configurations with the functions of age, sex, socialmilieu and cultural niveau.³

These studies constantly lead my collaborators and myself back to consider the psychology of the individual until at last it came to the point where we had to readjust the personalities of the children, to orient the pupils.

Less direct, perhaps, but more deep, is the study of identical twins which guided me from psychology to microsociology, or more exactly, to think of the problems of personality in terms of micro-milieu.⁴

Already in 1941, when I was ignorant of all of Moreno's works, I underscored "the determinism of the scale of social statistics," that the milieu defined *grosso modo* by the "combination of geographical, physical and social conditions in which the individual develops," that "the co-existence in the same profession, in the same city, in the same century," is not sufficient for explaining the formation of personality, just as identical twins, raised in a reputedly identical milieu are, in the final analysis, distinct personalities. The dissimilarities between identical twins thus revealed to me also a hiatus in the process of determinism. In order to understand the formation of personality I was thus brought to consider "the experiential aspect of the milieu," "the delicate structure of that sensorial, emotional, spiritual nurture which gives each one originality in a milieu which is supposed to be homogeneous."⁵

³ These researches have been published elsewhere in the magazine *Enfance*.

⁴ R. Zazzo, "Les Jumeaux et les Problemes de la Psychologie Génétique, *Enfance* 1948, No. 4, pp. 356-360.

⁵ R. Zazzo, "La Methode de Jumeaux," *Année Psychologique*, 1941, pp. 227-242.

Thus without any theoretic preconception, but because of a partial failure of my old working hypotheses, in a manner far too negative to fill a void, I conceived a plan of reality which I can today identify as that of microsociology.

It must be said that many more old reflections, and the light shed on psychological problems through the work of Henri Wallon prepared me for such a change.

I rediscover in the writings of Moreno and of Gurvitch some preoccupations which for a long time were those of psychologists, and a few of the essential criticisms which they address to the sociological imperialism of Durkheim, to the intellectualism of most of the social sciences. Macroscopic sociology limited itself up to the present to the study of global societies and collective representations, transcending the individual. And it was then that psychology faced either its progressive reduction to the core of sociology, or being limited to a psycho-physiology of emotion and instinct; irradicable opposition of the individual and society, with the impossible problem of the communication of essence, or the reduction of one or the other. Thus we see some psychologists like Freud, who consider society as a simple epiphenomenon, and other psychologists, as Piaget, who maintain that the evolution of the child goes from autistic, egocentric solitude to socialized thought.⁶ I know very well that we are here only dealing with an *intellectual* egocentrism. But in any case it is characteristic that *socialization* of the individual has mostly been considered as synonymous with *intellectualization*, that society has been considered almost exclusively as the beginning of knowledge and of reasoning.

Thus, all the affective aspects of human relations was ignored or quickly pilfered away by the social codification of the means of expression. Because they neglected the genetic and social meaning of affective life, sociology and without doubt still more psychology, they have for a long time deprived themselves of an element indispensable for their theoretic validity, indispensable for their practical efficacy.

The domain of the emotions remains for science in many respects a no man's land where the junction of psychology and sociology could be established, their junction, and at the same time their mutual fulfillment. It is to the credit of microsociology that it has attained this sphere in one stroke and that it has undertaken its methodical investigation.

But it would be interesting to see how by means of other channels

⁶ J. Piaget, *Le Langage et la Pensée chez l'Enfant*, Neuchatel, 1923.

the psychologists and psycho-sociologists have progressively acquiesced.⁷ For example, how a Piaget, through his theory of assimilation, how a Mead through his theory of symbols have come close to the domain which interests us without, however, being able to genuinely penetrate into it, held back, it seems, by their latent intellectualism.

Contrasting these, there is a work, that of Henri Wallon, in which all traces of intellectualism are eliminated, from which all temptation to isolate and hypothecate the origin of individual conscience is excluded, in which the constant effort is made not to juggle the contradictions of reality into the catch-all of traditional categories, in which the explanation of psychic life always begins by a return to its primary sources. And it is then that the, in my opinion, fundamental idea of syncretic sociability appears. It was at the Sorbonne from 1929-1931, in a course devoted to the "origins of personality in the child" that Wallon for the first time described this form of sociability, anterior to language, this "narrow subordination of individual attitudes to the formula of the group," where each one receives his part of the structure or situation in which he participates."⁸

This syncretic sociability marks for the child of man the most archaic stage of its psychological development, the counterpart of his total helplessness. Incapable of moving, incapable of coordinating his motions, it is impossible for him to relate activity with objects without the intervention of others. "Incapable of accomplishing anything by himself, he is manipulated by others and it is in the movements of others that his first attitudes will take form,"⁹ postural attitudes: psycho-motoric stimulus of the emotions; confusion, communication with the environment: the establishment of *emotional fields* which are also the first social constellations.

Thus emotion, placed again in a genetic and functional perspective as a presemantic language, the first form of sociability, appears at the same time as the first organized manifestation of psychic life.

For the classic sociologist *sociability* was an individual reaction, more or

⁷ It is convenient to mention here the relationship between the psychological theory of *decentralization* (Piaget) and sociological theory of *reciprocity of perspectives* (Gurvitch).

⁸ H. Wallon, *Les Origines du Caractère chez l'Enfant*, 2nd edition, Paris, 1948. For the reader's orientation, see also J. L. Moreno, "Spontaneity Theory of Child Development," especially the chapter on the *Matrix of Identity*, Beacon House, 1944 (Editor's note).

⁹ H. Wallon, "Le Rôle de l'Autre dans la Conscience du Moi," *The Egypt, Jnl. of Psychology*, June, 1946, pp. 1-11.

less negligible; it appears here as the very stuff of which original social matter is made. The logic of words or the artifices of introspection undoubtedly establish an irradicable contradiction between syncretic sociability and spiritual society, between emotion and reason. It is quite evident that emotion can enter into conflict with ideas, that it restrains them, that it obnubilates them. But because of its place in mental development, through its function of unification, of social communication, emotion prepares the intellect, it serves as a "transition between the purely automatic which is subject to continuous stimulation from the environment, and intellectual life which, arising from ideas and symbols can supply action with other motives and other abilities than those existing at the present moment."

Recently, in a course at the Collège de France, Henri Wallon was led to refine his concept, to study the genesis of personality more closely. The image which he uses is not that of the atom but that of *nebule*. Thus he wishes to make us understand how the progressive reduction of syncretism takes place, and the individual's innermost, essentially social character emerges.

If one commences by admitting the existence of autonomous beings, with tightly closed minds, of monads, one will not understand how the slightest communication between them can take place. The problem of *communication* between the supposed psychic substances, the I and the other, the individual and the social, is suppressed if one first observes, in the life of the child, this complete union, prior to all discernment. Without this union of the first human experiences one would never understand how the learning about the other could be *interiorized*, since interiorization would already imply the existence of a distinct I, and for the same reason one could also never understand how the individual could *exteriorize* the other, give him life and consistence outside of himself.*

It is by a process of progressive differentiation that the genesis of interioration and of exterioration is simultaneously accomplished, as if it were in the texture of the same experience, of the same psychic matter as, both adversaries and complementary, the I and the other are formed. Thus, in this undifferentiated mass of experiences, which Wallon describes as a kind of psychic cloud, a nucleus of condensation which would end by forming itself, *the I*, but also a satellite: *the other* arises. The other is therefore within us, an intimate and secret stranger. He is the indispensable complement, the necessary opposition to the affirmation of the I. He is made of the same substance, of the same flesh. The individual is essentially social, by the very fact that he understands that he is an individual. He

is that, not by the actual presence of other genuine individuals, not as a consequence of exterior contingencies, but by the very fact of deep necessity. The quality of being social is without doubt not congenital with him, but it creates itself by evolving in the midst of the milieu which is indispensable for its life. *The human being is genetically social.*

In this fashion sociability in its different forms is explained. The relations of the individual with his genuine environment have as intermediary, as fundamental interpreter, "this phantom of others which each one carries within himself."

The sociology of the "we" would thus be akin to a psychology of the "double."¹⁰

If I have developed this Walonnan theory of personality at too great a length (not enough, however, so as not to employ the always dangerous shortcut of metaphors), it is because it brings to the surface all kinds of needs of contemporary psychology, needs which microsociology intends to satisfy.

First there is this primary demand of taking *affect* into consideration, to recognize its fundamental rôle; not to consider emotion à priori as being merely a factor in organic disturbance, a parasitic reaction; to determine the psychological and social function of emotion.

Then there is this other fundamental demand not to be resigned to the dilemma of irradicable duality of individual and social; to start from the *fact* of their indissoluble unity, regardless of whatever the difficulties and internal contradictions of this unity may be.

It is characteristic that the psychologist and sociologist both arrive, and by such different routes, at the definition of this unity in a social constellation where the bonds are those of pure emotion; the same demands to grasp reality in its genesis, in the process of becoming, the same demands, also, of combining clinical method with statistical control, not to sacrifice man's immediate experience to the false rigor of numbers.

Far be it from us, however, to believe that this convergence suffices to define once and for all our perspective of the human sciences, that it leads to an overthrowing of all our old values. The determination of a microsociological plan was undoubtedly necessary. But the use of new ideas, in statu nascendi, as Moreno would say, often presents a danger of extrapolation, of invasion. And the danger is the greater here because the

¹⁰ On this relation of the "we" and of the "double," see also my two studies published in *Enfance*: "Images du Corps et Conscience de Soi" (1948, No. 1, p. 29) and "Les Jumeaux et les Problèmes de la Psychologie Génétique," *op. cit.*

needs which Moreno and his followers desire to satisfy belong to the world of action, and because that science desires to be militant there.

What I fear in the sociometry of J. L. Moreno is, in fact, its tendency to find fundamental reality in affective life as well as the correct attitude to understand this reality.

The new scientific spirit which he extolls (a superior objectivity for having passed through subjectivity) thus borrows creative strength from its object, but also the syncretism which distinguishes it.

The psychology of affective life remains to be produced. That is correct. And Moreno thinks that if we have not done it, it is because we are branded and paralyzed by the comprehension of material things, that our thinking, by having applied itself solely to brute matter, has become hardened, dense. There is some truth in this belief, but its logic is too simple, it seems to me. Another aspect of the truth might undoubtedly be expressed thus: we are too involved in ourselves, too bound in the human situation, to be able to examine it with clarity. With regard to man we are governed by opinions. And opinions are stereotyped concepts which we apply with passion. I believe that, in order to progress, *homo sapiens* must "break the natural and collective symbiosis, to go beyond animal influence and to emerge from the rule of opinions," and that in a very complex dialectic every one of the obstacles is a lever utilized for the rupture of the other.¹¹

Without doubt the study of social configurations is carried out in sociometry under elaborate statistical control. Without doubt, after having defined the social atom by affective criteria of human interrelations, the sociometrists are obliged to search again for "the causes underlying the choices and rejections observed among the members of a group."

But J. L. Moreno always gives evidence of much forethought and often of uneasiness. He is afraid that his followers might have a tendency to sacrifice the deep reality of the *socius* to the artificiality of the *metrum*, he is also afraid that the underlying causes may be a pretext for abandoning social reality itself.¹²

From the *psychological* point of view it must, however, be quite evident, to Moreno as to ourselves, that the description of the individual in as many social atoms does not allow either a sufficient explanation or a

¹¹ R. Zazzo, *Le Devenir de l'Intelligence*, Paris, 1946, p. 69.

¹² J. L. Moreno, "Contributions of Sociometry to Research Methodology in Sociology," a paper read before the annual meeting of The American Sociological Society, Chicago, 1946, *American Sociological Review*, Vol. XII, No. 3, June, 1947.

complete understanding. The rôle of the individual, at a given moment and in a given group, is not merely the result of the present situation but of a long history. His actual rôle is determined by successive and simultaneous belonging to several groups, to groups placed on numerous levels of social reality. The psychologist always comes back to this same methodological question: how to grasp in *present*, observed behavior those causes which belong to the past and which bear upon the future. In this respect, there are sociometric tests, similar to psychometric tests so disfavored by Moreno's school: these are *previous deductions*, divisions whereafter one expects to be able to reorganize the whole.¹³

Once the sociogram is established, the formula of social atoms defined and the psychodrama played, if one wishes to understand the individual, to understand and help him, one must reorganize his history, seek the motivations for his rôle, also keep account of causes of a purely physiological and somatic nature. It is a return to psycho-physical instruments and psychotechniques. It is a return to customary clinical processes, as is proved by the currently increasing use of psychodrama by the psychoanalysts.

But the human drama could not be reduced to the formula of a psy-

¹³ We must not permit ourselves to be misled by the false symmetry, by the pseudo-complementariness of these two terms: sociometry, psychometry. Psychometry has without any doubt the individual as object, but it cannot grasp him but by placing him in a biologically and socially defined group (for example, the ten-year-old children in the public schools in Paris). Sociometry starts from a social reality, but this reality is defined by its "psychological foundations." (Northway.) Sociometry, says H. H. Jennings, is a "psychological geography" of the community. Without doubt, for Moreno, the principle of gravitation, of organization of the group, seems to play its part "irrespective of the membership" (Who Shall Survive?, p. 3) which does not prevent him from defining the social atom as "the smallest unit of *psychological* relations, a sort of individual cell. . . ." (This quotation from the Glossary of Who Shall Survive? is incomplete. We are herewith quoting it in its entirety, for further clarification of the reader: "The smallest constellation of psychological relations which can be said to make up the individual cells in the social universe. It consists of the psychological relations of one individual to those other individuals to whom he is attracted or repelled and their relation to him all in respect to a specific criterion (as living in proximity)" p. 432, Editor's note) and again to say of sociometry that it is "the mathematical study of *psychological* properties of populations" ("Sociometrie et Marxisme," *Cahiers Internationaux de Sociologie*, Vol. VI, 1949, p. 44).

An ambiguity persists in reference to this psychological term which seems here synonymous for mental, emotional (and applicable to social reality) while its current meaning is applied to the conduct of the individual as such. Either this ambiguity must be explicitly dispelled, or one is entitled, as Gurvitch does, to reproach Moreno of a latent psychologism.

chodrama. At least we must admit that the well conducted psychodrama might progressively reveal, under the diversity of masks and masquerades, everyone's original spontaneity, the living source of his creative personality.

But what is this spontaneity independent from the human groups in which it takes shape, what is this creative principle of human groups independent from the material techniques by whose means civilization was accomplished? Under the pretext of reacting against all that is entirely mechanized, all that which is formal in civilization, does not J. L. Moreno, too, make an appeal to a creative élan existing within one's self, to a purely formal principle? Does not he separate spontaneity from its true history; while seeking to define a genuine society, independent from its material conditions of existence, does he not succeed in denying genuine society?

The fundamental distinction of the sociometric doctrine is that one which Moreno established between stereotyped institutions, "official" groups, cultural groups, and the groups created by affective interrelations; the first are "formal," only the second are "authentic"; a distinction which is still more profound between man in his creative spontaneity and the *technical* animals, the robots, those damned creatures of *homo sapiens*. "Who Shall Survive?", the sorcerer's apprentice, or his creatures? Will humanity be able to escape from the invasion of robots, the canker of culture?¹⁴

Undoubtedly, side by side with evil robots as guns, the atomic bomb, all the weapons of war which, judging from all evidence, destroy humanity, one can enumerate domesticated robots, among which books find a first rank. But these domesticated ones are always virtually enemies because they are born of our spirit, although separated from us; endowed with an independent power they escape our control, they can one day turn against us. Our creative élan is lost in the desert of machines and cultural "conserves," our science is perverted in its contact with nature, in its objectivity which is a process of dehumanization. A total conversion is necessary: man must turn back from nature towards man, from physical objectivity to a subjectivity of a superior order; to a revitalizing of his spontaneity as it is expressed in the pure state, not in technical productions but in the effervescence of human relations.

And the world will be saved when *all* individuals are thus converted, to the last man, for it would take but one single person to turn traitor, he could become again, after a brief interval, "the secret agent" of objective

¹⁴ J. L. Moreno, "The Future of Man's World," *SOCIOMETRY*, Vol. VIII, p. 536.

science,¹⁵ the *scientist-criminal*.¹⁶

Perhaps J. L. Moreno will forgive me if I have sacrificed several nuances of his thought. But I do not believe that I have betrayed its spirit. "The compromising exaggerations" which he condemns in his own disciples have nothing to do with the machinism which constitutes and remains the essential part of his doctrine, a doctrine which he developed long before the advent of sociometry, and one which we find again with the same vigor in the recent article from which I have borrowed his formulae on the robots and culture.

It would not be legitimate to discuss sociometry without making allowances for this philosophy out of which it is born, which supplies its fundamental ideas, its themes, including its methods of subjectification. Any criticism which would not trace back the philosophical source of this science would be in vain.

The crucial point of all criticism here is the idea of culture. If Moreno denies all "formal," all "official" groups authenticity, if he searches for the only human and social reality in the play of affective relations, more precisely, in the moment when these relations are woven, in *statu nascendi*, it is because for him cultural possessions are a permanent menace, a source of spiritual destruction, a principle of death.

But can we honestly distinguish between the supposed spontaneity of the individual and the means by which this spontaneity is expressed? Culture cannot be reduced to the robots of which Moreno speaks. It does not only consist of "conserves" of a more or less formalized macrosociology. It is the milieu in which we feel, in which we live, the nourishment of all and always. When I first spoke of the micro-milieu, it was in behalf of this subtle nourishment. Every being creates his own particular internal and external milieu by his manner of assimilating this nourishment. It is an assimilation which depends first upon his organism, upon his nervous system, but also upon the unique place which he occupies in time and in space, of the place which he occupies in his primary human contacts, upon his *I's* and his *we's*, these represent for him the vehicles and the intermediaries of civilization. Cultural acquisitions are the sediments, the soil from which the human being obtains his substance, not merely for his explicitly human conduct but for his very sensorium. At the time when the child does not yet distinguish between nature and the artifice everything is

¹⁵ J. L. Moreno, "Sociometrie et Marxisme," *op. cit.* p. 53.

¹⁶ J. L. Moreno, "The Future of Man's World," *op. cit.* p. 541.

natural to him. The world as it is perceived and lived thus changes from one generation to the other, even through the changes of our techniques, through the evolution of language, the most delicate but also the most efficient of human techniques.

How is it possible to study the individual while neglecting this essential nourishment, this "marrow of substance"? And would it be possible to keep it in mind while elsewhere denying all value and even all authentic existence to the material infrastructure of civilization?

No doubt there is a problem of control and of social utilization of techniques—and to quote an example dear to Moreno, a problem of control of atomic energy—and I am very much in agreement with him in believing that the present political society cannot resolve this problem, since according to the famous formula of a French socialist "capitalism carries war within it as the cloud carries the storm."

No doubt there is a problem of *alienation* of man; the cultural products of his activity could, similar to his material products, turn against him and overwhelm him by the power with which he has endowed them: the power of myths, the power of political states, the power of money.

No doubt there is a problem of subjectification, more precisely of the *pang of conscience*: this refusal of man to be considered an object among other objects, his pang of conscience as the source for all material and spiritual values.

But is this not, in fact, doing away with all of these problems, doing away with all the real contradictions, rather than suppressing one of its terms? The condemnation of cultural values pronounced by Moreno is not only moral, it is an ontological order. Not only as Znaniecki says,¹⁷ does the emotional constellation of individual relation enjoy an original preeminence in relation to formal groupings, to stereotyped institutions, to fixed products of culture, but only this affective reality is genuine.

Actual, authentic, *real*, these expressions recur in all Moreno's works to qualify the affective structure of the individual and the group, whose duality is resolved, moreover, by the unifying idea of the social atom.

In the intellectualistic philosophy everything which did not immediately fit into the frameworks of logic was considered an offense to reason: in the end emotion is denied. Everything which is not *intelligible* does not exist. In the emotionalism of Moreno, and of all those who, today, swim in the troubled waters of the "concrete" and of "existence," everything which is

¹⁷ F. Znaniecki, "Sociometry and Sociology," *SOCIOMETRY*, Vol. VI, August, 1943.

not effervescent with emotion is an offense to spontaneity. Everything which is not *lived* does not exist. It is revenge of the emotional through an annihilation of everything which is not emotion.

These two contradictory attitudes spring from the same mentality which isolates an instant of the real in order to raise it to the absolute, which capitulates before the diversity of the universe.

If we are so much concerned about Moreno's tendencies, it is because his scientific technique is truly identical with his philosophy. After having contributed a fertile impulsion to human sciences in refocusing the attention of seekers towards the affective, the stumbling block of psychology, the no man's land of sociology, sociometry runs the risk of carrying us, scientifically, towards an impasse; politically, towards new mystifications.

The limitations of sociometric techniques is not so much related to the temporary poverty of its metric and graphic means, as to its refusal to admit the existence of things other than the substance of emotional relations, its incapacity to demonstrate by which dialectic emotional life "opens the door" to an equally living intelligence, its tendency to take refuge in microsociology which it reduces, moreover, to the aspect of inter-individual relations exclusively.¹⁸

Thus psychology and sociology lead back to the formulation of social atoms.

Thus the permanent revolution which Moreno conceives will be accomplished by the mere appearance of sociometric tests.¹⁹

¹⁸ "The social atom is simply an individual *and* the people to whom he is emotionally related at the time." J. L. Moreno, *SOCIOMETRY*, Vol. X, 1947, pp. 80-84. It may be well to point out to the reader that the above sentence attains a somewhat different meaning when read within the full context of the preceding phrases, as follows: "People usually thought of the individual as the center of the social universe, of the family as the next larger unit, then the neighborhood, the village, etc.; from the point of view of surface experience sociologists accepted tacitly a scale starting with the individual and ending with the entire universe. We sociometrists challenged this view." (Note of the Editor.)

¹⁹ It is a sign of the times that since the second world war, and notably in the United States, one searches for the factors responsible for war at the level of psychological relations; that we want to heal the social ills by starting with the individual.

Moreno's sociometry here joins psychoanalysis again. The psychiatrist wants to become sociatrist. It seems that this attitude is likely to become the official doctrine of UNESCO. We asked Dr. Th. Brosse, who is responsible for the department of psychology at UNESCO what the expectations of such a therapy would be; she answered without anxiety that we must certainly count on two thousand years before we can cure humanity by individual education. Such an assertion has the

If the social force outside of the individual were not a simple metaphor but a real metamorphosis of the forces of man, if, as a consequence, the liberation of man would demand means which are not at the level of the social atom but of global societies, if material liberation were preliminary to spiritual liberty, if Mao-Tse-Toung was actually correct, at least as against Confucius, one could toss back at Moreno the epithets with which he crushes us: "secret agent," of social conservatism, of obscurantism. And when Moreno stigmatizes the "scientist-criminal" in the person of those who believe in the virtue of intelligence, I hear again the führer of hitlerian youth: "when anyone talks to me of culture I draw my revolver."

And I know, nevertheless, that Moreno intends to give the world the understanding for true, human values, the meaning of a genuine democracy.

Let us hope that our efforts will not be perverted. May our good intentions finally meet.

Sociometry will push back the limits of our knowledge, provided that we recognize the limits of its power. Microsociology will contribute to the enrichment of our knowledge, provided that it will establish itself as a step of reality among others; it will enable us to better understand the individual and society in one stroke, provided that it does not pretend to absorb one and the other completely; it will aid us to transform the world to the extent to which it will reveal genuine forces to us, efficacious causes, that is to say, such as will engender diversity, which permit excellence; to the extent to which it will not immobilize our science by an abstract idea of dynamism.

advantage of dispelling all contradiction. Auguste Comte was less cautious when he foresaw the installation of peace due to positive sociology after the lapse of a century, approximately around the year 1940.

A SOCIOMETRIC INQUIRY IN THE FRENCH ARMY

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Up to now it seems that in France, the schools and the army are the only organizations willing to become fields of research for sociometric studies. This can be explained by the fact that it is in the interest of both school and army to try to solve the important problem of functional cohesion.

The present research is relevant to both pedagogical and military fields. The Commanding Officers of one of the most important French army staff-school, not entirely satisfied with the results obtained through the very sketchy methods of personnel selection and orientation, and conscious of the limitations of a psychometric inventory in which the individual alone is considered, regardless of his social context, decided¹ to use sociometric techniques for a better formation of their students.

In this school—which we cannot name for evident reasons of discretion—very highly scientifically qualified officers are trained to staff work. At the end of their course, they will become technical advisors to headquarters. The main characteristics of this population of 35 subjects are worth mentioning. These regular army officers (captains, majors) belong to all different services: infantry, artillery, engineers, signals, armored divisions, etc. They are, without a doubt, a cultured and technical “élite” compared with the average level of officers in the French army. Most of them have graduated from the best military schools: Ecole Polytechnique, St. Cyr or from the best civil schools: Ecole Centrale, Arts et Métiers, etc.; others have acquired university degrees equivalent at least to Licence or Doctorat-es-Sciences. Furthermore, before being admitted to the special teaching of this staff school, all these officers are bound to acquire a technical speciali-

¹ The author of this research, Lt. Commander in the French Fleet Air Arm, formerly Director of the Personnel Selection Bureau of the French Air Force, had had the opportunity, as Professor of Military Psychology at the “Ecole Supérieure de Guerre” to give to the officers-students (1947-1948-1949) a detailed account of sociometric methods inaugurated by J. L. Moreno and of the microsociological point of view of G. Gurvitch and of illustrating those by many examples of practical realizations taken from the American sociometric school (in particular: Jenkins, Jennings, Lazarsfeld, Loomis, Lundberg, Zeleny). These lectures and the deep interest they aroused were no doubt to influence the decision of the French Army High Command to inaugurate sociometric researches.

zation diploma in a civil scientific school (after an entrance examination and two years schooling): Ecole Supérieure d'Electricité, Ecole Supérieure d'Armement, Ecole des Télécommunications, Institute d'Optique, etc. Besides all these degrees, these officers (age average: 37) must have acquired a real experience in military matters and served in several fighting units. The aims of this staff school are: (1) to coordinate and supervise these officers' two year courses (in factories, laboratories, arsenals—civil or military), (2) to put them through a special four months' training to staff work.

As regards this last four months' period of intensive training (lectures, classes, practical tasks, team work), the 35 subjects were divided into four groups (three groups of nine officers and one of eight), each group being placed under the supervision of an instructor (major or colonel). It is during this intensive course that this research was carried out. It aimed at fulfilling the wish of the Commanding Officers to develop in the school the team-work system and thus to train the officers to the reality of team-work in headquarters.

THE EXPERIMENT PROCEDURE

The following experiment procedure was adopted after a preliminary survey of work conditions in the school (nature of the work, military curriculum, teaching methods):

1. *Sociometric battery*: four sociometric tests, the first being psychetelic, the three others sociotelic.²

2. *Near sociometric tests*, including several tests, questionnaires and rating-scales (acquaintance tests, leadership rating-scale, constructivity rating-scales, technical and cultural prestige test, frequency contact questionnaire, biographical inventory, interests questionnaire, etc.).

3. *Personality inventory (Bernreuter) and interview.*

SOCIOMETRIC DATA

The *first sociometric test* was as follows:

- a) Amongst all members of the four sub-groups of this course, which are—whatever may be the reasons—those towards whom you feel drawn? Put a cross in front of their identification numbers. (There is no limitation to the number of your designations.)

- b) Underline the crosses belonging to the three officers towards whom you feel most drawn.

² H. H. Jennings: "Sociometric differentiation of the psychegroup and the socio-group", SOCIOMETRY, Vol. X, No. 1, 1947.

c) Amongst all your comrades you have already chosen in a), encircle the crosses belonging to those whom you think are drawn toward you.

Cumulative positive choices (+1 for unlimited choices—Zeleny's technique; +3 for limited choices—Moreno's technique) are so distributed:

$$\begin{array}{l} \text{choosing} \left\{ \begin{array}{l} M = 18,97 \pm 1,08 \\ \sigma = 6,32 \pm .76 \end{array} \right. \\ \text{chosen} \left\{ \begin{array}{l} M = 18,97 \pm 1,46 \\ \sigma = 8,56 \pm 1,02 \end{array} \right. \end{array}$$

The relative independence of these two distributions has been demonstrated: r (product-moment) = .232 (non-significant at $P = .05$, for 33 degrees of freedom) and the difference between the two standard-deviations was shown statistically significant (Student-Fischer's $t = 2,87 - P < .002$). The sociograms relative to this test show already the psychetelic character of its setting (small and numerous networks) and the concentration of choices within each of the four official sub-groups.

Question c) of this test has been used to establish an individual coefficient of "awareness of reciprocations". The first one is defined by:

$$E = \frac{2R_j + R_f}{2R_j + R_o}$$

where:

R_j = sum of exact reciprocations

R_f = sum of false reciprocations

R_o = sum of omitted reciprocations

Thus, $2R_j + R_o$ is the maximum total of possible reciprocations obtained by an individual, with a special scoring dependent on the different intensity of reciprocations.³

The coefficient of awareness of reciprocation is defined by:

$$A = \frac{R_j}{R_j + R_o}$$

The use of these coefficients will be discussed later.

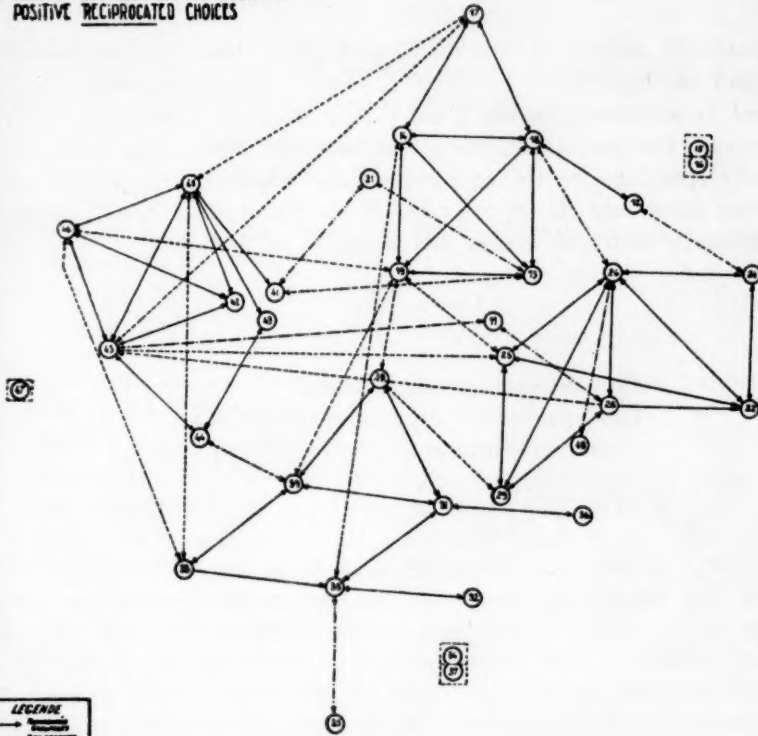
The *second sociometric test*, the principle of which was devised by G. Gurvitch⁴ is called the "combined scission test":

³ For details about this special scoring, and for all technical matters about this study—the present report being only an abstract—see: "Sociometric and psychometric research in military staff-work", by P. H. Maucorps, Centre d'Etudes Sociologiques, Paris, 1949.

⁴ See "Microsociologie et Sociometrie" in *Cahiers Internationaux de Sociologie*, Paris, 1948.

TEST SOCIOMETRIQUE N°2
 SOCIOMETRIC TEST N°2
 TEST COMBINE DE SCISSION (Gurwitsch)
 COMBINED DISSOLUTION TEST (Gurwitsch)
 SCHEMA DES RECIPROCITES POSITIVES
 POSITIVE RECIPROCATED CHOICES

C/11/1



"The Commanding Officers of your school have noticed the deficiency of team work, involving the participation of all members of each group. They have therefore decided to reconsider your division in groups of nine. So as to get the most out of the teaching of this school and bearing in mind the fact that only the results obtained through team-work will be taken into account by the Commanding Officers, put a cross in front of the designation numbers of the eight officers with whom you would now like to be associated with."

In this case, the hypothesis of dissolution has been considered as very

plausible by the subjects, owing to a psychological preparation and to the direct participation of their superior officers. The distribution of choices received is as follows:

$$M = 7,87 \pm .84$$

$$\sigma = 4,88 \pm .52$$

The statistical analysis of this distribution shows that it is not possible to discard the hypothesis of normality. The important assymetry usually observed in sociometric curves is not present here. The sociogram of this test reveals the persistence of certain networks within the sub-groups. Generally speaking, are the 35 officers well integrated and satisfied with their own sub-group? If we make use of the "integration index" (Lazarsfeld-Criswell) to try to answer this question, we find that:

$$I = \frac{Roq}{Vop}$$

where:

Ro = number of reciprocations

Vo = number of unreciprocated choices

p = probability of choice (q = 1-p)

is very close to indifference.

The *third test* is as follows:

"Your Commanding Officers are considering the question of a new type of final examination at the end of your course. It includes a test bearing on the whole of your four months teaching. This test will last 24 hours, divided in three periods with two rest intervals of 1½ hour each. You will be asked for detailed reports on your work, as you proceed. In order to be able to solve in time the lengthy and intricate problems set out for you, you will have to work in teams of four, if you wish to succeed in this test which is meant to give your Commanding Officers precise ideas about your attainments and your aptitudes to staff-work."

"a) In view of all this, put a cross in front of the identification numbers of the three officers—chosen out of all the 35 members of your course—with whom you would wish to undergo this final test;

"b) In case these three officers, for some reason, could not become your associates in this final test, choose three others and mark them with underlined crosses;

"c) Amongst all those whom you have chosen neither as member of your team or as substitutes, put an encircled cross in front of the three officers with whom you would least like to be associated."

If we reckon the ~~four~~ first positive choices (first team) are worth +3 and the second positive choices (second team) +1, we have the following positive distribution of choices:

$$M = 11,46 \pm 1,57$$

$$\sigma = 9,16 \pm 1,09$$

If we assign to negative choices the conventional value of -3, the distribution of rejections received is as follows:

$$M = 1,47 \pm .47$$

$$\sigma = 2,69 \pm .32$$

which appears abnormal. If we use the "assymetry coefficient" to control this fact, we have:

$$\beta_1 = \frac{m_3^2}{m_2^3}$$

where m_2 and m_3 are the moments of second (variance) and third order. A value of 2,91, characteristic of J-curve (3) was found.

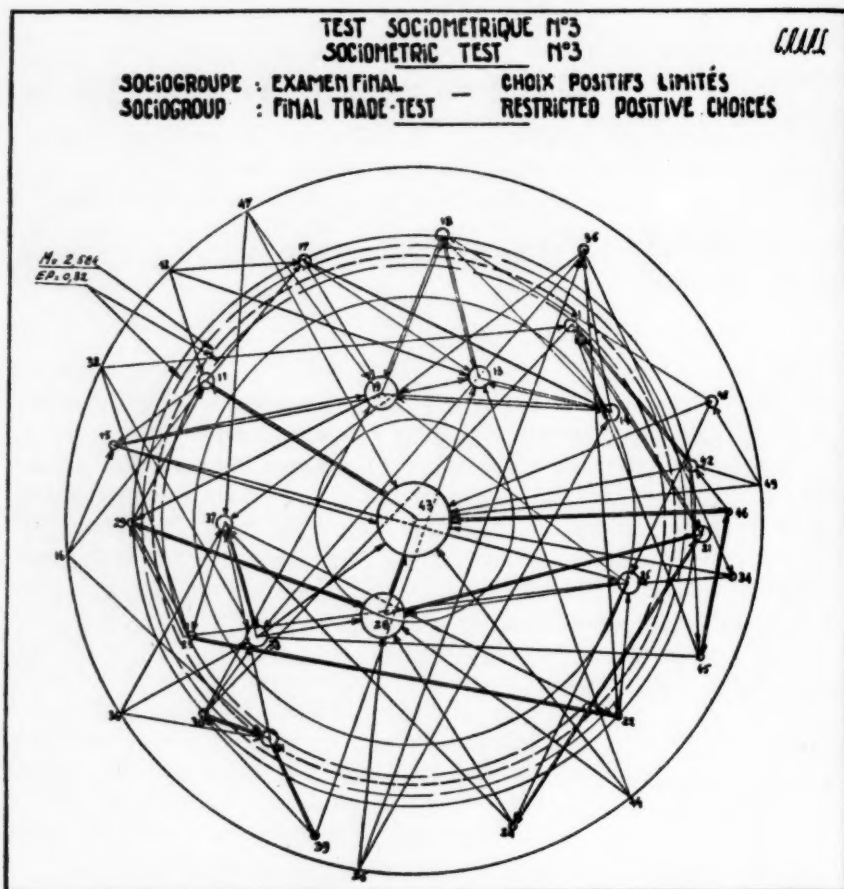
Is this test internally coherent? Is there any contradiction in the direction of choices? Are subjects mentioned as first choice by some officers equally mentioned as second choice by others? Is there a sufficient discrepancy between subjects chosen and subjects rejected? The tetrachoric correlations calculated for this consistency control are reproduced below ($R_{+1,+3}$ represents the distribution of choices received under both criteria +1 and +3, . . etc. R_c the distribution of choices received under the three criteria +1, +3 and -3):

	$R_{+1,+3}$	R_{-3}	R_c
R_{+3}	.95	-.71	.15
$R_{+1,+3}$		-.41	.43
R_{-3}			.78

We may conclude that, as a whole, the subjects mentioned as first choice are also generally chosen as second choice; that the individuals rejected are not as a whole chosen for the second team and even less for the first team; that the score of general acceptance (R_c) is specially influenced by rejections.

Another problem arises here. What are the frequencies of the positive reciprocations, the negative reciprocations and the reverse reciprocations?

SOCIOGRAM OF
POSITIVE RECIPROCATIONS
TEST NO. III



1. *Positive reciprocations.*

Between the two positive criteria (+1, +3), the observed frequency of reciprocated choices is 42, against a chance probability of 37, calculated by Crisswell's formulas.⁵ This difference is not statistically significant and

⁵ J. H. Crisswell: "The measurement of group integration", *SOCIOMETRY*, August 1947.

brings to light the general indifference of the group studied as regards mutuality.

2. *Negative reciprocations.*

Only one pair of individuals show mutual rejection (subjects 24 and 47). This result is highly significant: the individuals of the group studied develop between them a trend of general acceptance or tolerance, which excludes systematic antagonism. *only*

3. *Reverse reciprocations.*

Between the highest positive criterion (+3) and the negative criterion (−3), the observed frequency of reciprocations is 5 for an expected frequency of 25. The computed χ^2 for this difference is 8,65. It is highly significant ($P < .001$ for 1 degree of freedom). The reciprocations observed with the criteria +1 and −3 occurred six times and are significantly less frequent than the chance ratio ($\chi^2 = 5,74 - P < .002$). The subjects of this study seem to be mostly aware of the direction of their fellow-officers' choices in connection with themselves. This result is relevant to the very careful way in which the subjects have answered, especially as regards rejections, and can be explained by their high cultural and intellectual level. It is only natural that a population of level-headed, psychologically aware subjects, should avoid to develop in its midst contradictory reciprocations (see the sociogram of this test).

The *fourth sociometric test* is as follows:

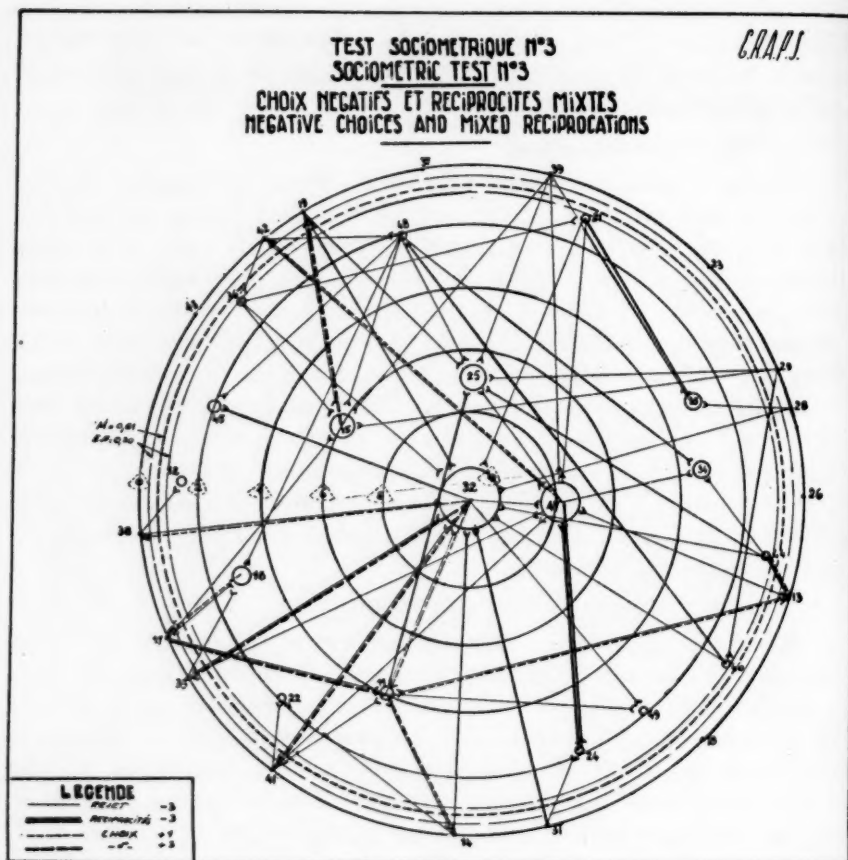
"You will be posted to some headquarters at the end of this course. The vacancies in those headquarters are not yet known in full. In order to arrange your postings in the most favorable conditions, point out the fellow-officers (there is no limitation to your designations) of this course with whom you would like to be posted to the same headquarter in order to achieve collective high efficiency upon which might depend your career. In case the vacancies should be, as we expect, of five officers per headquarter, point out, amongst the fellow-officers you have already chosen, the four officers with whom you would best like to be posted."

The general distribution of choices (+1 for unlimited choices and +3 for preference choices) is as follows:

$$\text{choosing: } \begin{cases} M_E = 19,68 \pm 1,20 \\ \sigma_E = 7,05 \pm .84 \end{cases}$$

$$\text{chosen: } \begin{cases} M_R = 19,68 \pm 1,85 \\ \sigma_R = 10,67 \pm 1,28 \end{cases}$$

SOCIOGRAM OF REJECTIONS AND REVERSE RECIPROCATIONS TEST III



There is no agreement between choices made and choices received ($r = .164$, not significant). The two distributions are quite different in dispersion (σ):

$$t = \frac{\sigma_R - \sigma_E}{\sigma(\sigma_R - \sigma_E)} = 2.4$$

(significant at $P < .008$).

In view of the very sociotelic nature of this test, it is specially important to control the degree of integration of the population. A way of approach would be to consider the frequency of reciprocations under the criterion +3 (preference criterion). We find an observed frequency of 21 reciprocated choices against 14 expected. That is an index integration of 1,60 which seems to indicate, for the first time, a trend towards a certain cohesive density. Unfortunately, the computed χ^2 of 1,93 is not significant and we must once more conclude that general interpersonal relations are indifferent. A further step towards investigation consists in comparing the intercriteria reciprocations really observed with the chance ratio of this type of mutuality. This procedure seems to be more adequate, because of the relationship between the two criteria (+1 and +3). In this way we count 109 intercriteria reciprocations (21 for +3 v.+3 — 40 for +3 v.+1 and 48 for

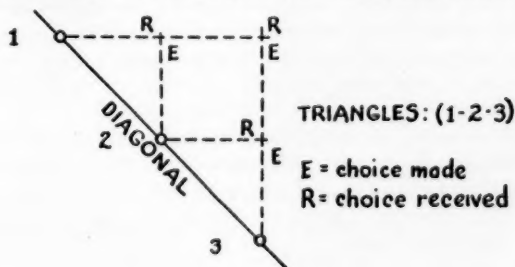
+1 v.+1). The chance ratio is $\frac{.131}{.593}$. The index of integration is:

$$I = \frac{109}{752} \times \frac{.593}{.131} \quad I = .657$$

This result seems to contradict the previous one. Is the group, as a whole, not only indifferent but also disintegrated? The computation of χ^2 leads to a value of 8, 65, significant at $P < .001$. Then, under the consideration of intercriteria mutuality, the group shows a lack of cohesion, of "esprit de corps", of the sense of "we".^{6,7}

⁶ This is an example of how careful one must be in drawing conclusions out of numeric results obtained from indices, even if those are built with the consideration of the chance ratio. The value 1,60 previously found, might have led us to believe in the cohesion of this group. We saw that it was not so. What is more, the more precise and more accurate notion of intercriteria reciprocation has led to opposite conclusions, confirmed by the statistical significance computations without which all conclusions drawn are gratuitous.

⁷ As Crisswell pointed out, the counting of intercriteria reciprocations is a very



The frequency occurrence of triangles has been studied. As far as the preference criterion (+3) is concerned, their differences of structure are indicated in the following table:

Triangles:	with 3 reciprocations	with 2 reciprocations	with 1 reciprocation	with no reciprocation
	13-14-18	31-38-39	31-37-38	33-43-46
		41-42-45	33-37-38	42-43-46
		17-18-19	26-33-37	
		13-17-18	26-28-33	
Individuals'		14-17-18	24-26-37	
identification		14-18-19	24-26-28	
numbers			23-42-43	
			43-45-46	
			42-45-46	
			22-23-35	
$\Sigma = 19$	1	6	10	2

The probability of occurrence of triangles can be computed on the basis of the general theorem established by Dr. Schützenberger.⁸ The average number of triangles expected is given by:

$$\left[\frac{N}{3} \right] \frac{2d^3}{(N-1)^3}$$

for the probability that individuals i, j and k will form a triangle is:

$$\frac{2d^3}{(N-1)^3}$$

In the case of triangles with three internal reciprocations, the probability of occurrence is:

$$\left[\frac{N}{3} \right] \frac{d^6}{(N-1)^6} + \frac{d^6}{6(N-1)^3}$$

laborious task. It cannot be carried out without mistakes and omissions from the sociograms. The most convenient procedure consists in putting down on half the sociomatrix the choices made and received by each individual. Thus each little square in the matrix (column and row) indicates simultaneously the reciprocations. The counting of triangles is then easy and safe. Whenever a rectangular figure can be drawn with a "choice made" between two "choices received" or by a "choice received" between two "choices made", the fourth corner being on the diagonal, it is a triangle: In the case of triangles drawn with reciprocations, the three apexes of the rectangle are composed of reciprocations (see sociomatrix of test No. IV).

⁸Dr. M. P. Schützenberger: "Etude statistique d'un problème de sociométrie" in *Gallica Biologica Acta*, Paris, 1948.

The variance of this distribution, necessary for the testing of statistical significance, has a very complicated expression.

For the expected frequency of occurrence of squares, the formula:

$$\frac{d^4}{4} \times \frac{N(N-2)(N-3)}{(N-1)^3}$$

may be used and the following one for "perfect" squares (6 reciprocations):

$$\frac{d^{12}}{24(N-1)^3}$$

In the case of the present study we find a chance probability of 16,6 triangles, against 19 really observed. This difference is not significant and we may conclude to indifference as far as this type of manifestation of cohesion is concerned.

This result is in agreement with the result already obtained as regards simple reciprocations or intercritical reciprocations. A special case is this of the triangle (with 3 reciprocations): 13-14-18 : the null hypothesis is discarded here ($P < .001$).

SOCIOMETRIC SYNTHESIS

The first use which must be made of the data issued from this sociometric battery of tests is to find their possible *intercorrelations*. These have been computed with Spearman's method of rank and the results are shown below:

	II	III	IV	Communalities
I	.809	.735	.839	2,385
II		.900	.888	2,597
III			.888	2,525
IV				2,615

These coefficients are all very high and the battery is very homogenous. The presence of a "general factor" common to the four tests is certain, but it is not possible to control the existence of other "group factors" for so small a battery. The first test is the least saturated in "general factor". This is probably due to its psychetelic criterion. Thus we may call this "general factor": "efficiency" (in collective work at school—test II; in examination—test III; in real staff-work—test IV). But this distinction between subjective attraction and objective efficiency must not be drawn

too far. The sociotelic and psychetelic criteria interpenetrate one another and act simultaneously. Attraction and prestige operate together.

Another aspect of possible relation between these sociometric tests has been investigated for test II and III. The psychological preparation prior to testing and the very contents of Gurvitch's test led the subjects to "neglect", that is to "tacitly reject" some of their fellow officers belonging already to their own sub-group. Is there some relation between those implicit rejections and the explicit rejections in test III? The distribution of "neglects", as far as test II is concerned, is as follows:

$$M = 25,75 \pm .82$$

$$\sigma = 4,76 \pm .58$$

It has been compared to the negative choices resulting from test III and has shown a correlation coefficient of .72. Thus when it is not possible to propose negative criterions, Gurvitch's test can be used as an efficient and discreet substitute.

This internal consistency and the general meaning of the results leads one to wonder if it would not be possible to use this battery as a tool for selection and prognostic of future collective output and efficiency. This has been investigated by simply adding the individual positive scores after reducing them to a Z scale (Fischer) and converting them in an S scale:

$$Z_x = \frac{X - M_x}{\sigma_x}$$

$$S_x = 5,0 + Z_x$$

This addition—no weight coefficient was used—means that we attribute the same importance to each of the four tests. The scores are so distributed:

$$M_s = 5,00 \pm .16$$

$$\sigma_s = .92 \pm .11$$

If we try to separate the 35 subjects into three categories, placing them on either side of the mean, then on either side of the standard error limits ascertained at a probability level $<.01$ ($t = 2,5$), we obtain the following trichotomy of "polarization"

Groups	I	II	III	IV	Total
Highly chosen $S_s > 5,40$	13-18-19	23-26-28	33-38	41-43	10
Indifferentiated status $4,60 < S_s < 5,40$	14-17	21-29	31-35-37-39	42-44-45-46	12
Under chosen $S_s < 4,60$	11-12-15-16	22-24-25	32-34-36	47-48-49	13

We have already seen that the expansiveness and the polarization are significantly correlated for responses relative to test I ($r = .232$) and test IV ($r = .164$). The computation of the coefficient of correlation between expansiveness in test I and IV leads to a significant value of .534 showing a trend of consistency in this phenomenon in spite of the slightly different nature of these two tests. Thus we may wonder if the expansiveness shown in all the criteria of the battery is related to the status of individual polarization. This is certainly the case ($r = .172$) and we may state that expansiveness and polarization are relatively independent in the sociometric process.

Individual regularity in sociometric scores, that is individual *intra-variability*,⁹ is so distributed:

$$\begin{aligned}M_v &= .30 \pm .02 \\ \sigma_v &= .14 \pm .01\end{aligned}$$

Is there any relation between regularity and polarization status? The correlation between these two distributions of scores is $-.580$. This means that the underchosen tend to be more constant in their sociometric position than the overchosen. This corroborates the results obtained at a previous stage (test III) which showed the constancy and the severity of negative choices.¹⁰ On the contrary, the sociometric positions of the overchosen are more fluctuating and more dependent on the specificity of the different criteria. This brings out clearly the fluidity and the specificity of the notion of leadership.

The individual polarization status does not take into account the true and complex interpersonal relationship. A further step must be taken. We thought that the proposed¹¹ concept of *intercriterial mutuality* could be used with profit. Seven different positive criteria (two in test I, III, and IV and one in test II) were used. We have already seen that they gave us very similar answers. It is logical to analyze the network of such similarly significant reciprocations. Furthermore, the mutuality concept becomes richer since we are now working on seven criteria, which means that each subject can be involved in 49 different kinds of reciprocations.

The reckoning of these intercriterial reciprocations is a rather cumbersome task. It has been facilitated by the use of a special matrix. A total

⁹ J. P. Guilford: "Statistics in psychology and education".

¹⁰ See H. Jennings' "Leadership and Isolation" and Smucker's op. cit.

¹¹ Crisswell: "The measurement of group integration", *SOCIOMETRY*, 1947.

of 1574 reciprocations has been found. Some of the results derived from the use of this method of intercriteria mutuality must be summarized here:

1.—The computation of the expected number of reciprocations has been done by using Crisswell's formula with seven criteria (different d_1 , d_2 , . . . d_7 being the means of choices made).

$$R_{1 \text{ to } 7} = 1.622$$

with

$$U_{1 \text{ to } 7} = 8.100$$

$$T = 9.722$$

The general index of integration:

$$I = \frac{R_{1-7}}{U_{1-7}} \quad \frac{q}{p}$$

being equal to .965.

The computation of the χ^2 for these frequencies shows that this coefficient is not significantly different from indifference. We can therefore say, in final conclusion, what we already concluded at the level of each test: the group is, as a whole, as regards mutuality, neither integrated nor disintegrated but "amorphous".

2.—Amongst these seven criteria, three of them are of a restricted nature and might be considered as more important. In order to take this fact into account, these "preference criteria" are weighted with a coefficient (+3, instead of +1 for the four "free criteria"). Thus the different intercriteria reciprocations were computed in accordance to this scale of values (i.e. a reciprocation +1 with +1 is counted +2; a reciprocation +1 with +3 = +4; a reciprocation +3 with +3 = +6). Individual scores of intercriteria mutuality can then be deduced:

$$M_m = 277 \pm 23,7$$

$$\sigma_m = 138 \pm 16,7$$

and the 35 subjects can be classified as follows, according to the total of their points of reciprocation:

Trichotomy of intercriteria mutuality	Number of individuals				Total
	Group I	Group II	Group III	Group IV	
High status $M_m + \sigma_{M_m} \times 2,5$ ($P < .01$)	14-18-19	23-26-28-29	33-37	41-42-43-45-46	14
Low status $M_m - \sigma_{M_m} \times 2,5$ ($P < .01$)	12-15-16	25	32-34-36	47-48-49	10
Indifferentiated status	11-13-17	21-22-24	31-35-38-39	44	11

3.—Does this way of measuring the intensity of mutuality correlate with the results already obtained? The relation between "polarization status" and "mutuality status" was found to be .831. Furthermore, individual "mutuality status" is directly dependent on the number of "satellites" which an individual gathers around him (from one satellite to 22) = .783. These two results are significant. Prestige plays an important role in the process of association studied here.

4.—Because of its greater sensibility and its superiority in sociometric adequation, this index of "mutuality status" was preferred to "polarization status" for certain comparisons.

Individual expansiveness in the seven criteria was compared to the "mutuality status". A correlation of .511 was found, showing a slight tendency for expansive people to be more associated (but not more chosen, as was previously found).

Awareness of reciprocation (see test I) was compared to "mutuality status". The different coefficients used: implication or intensity of real reciprocation (I), exactitude in perceiving mutual attractions (J) and consciousness of self expansiveness and attraction (C) were compared with the individual "mutuality status" (MS).

	I	J	C
J	.591		
C	.354	.526	
MS	.758	.434	.081

The independence of the three coefficients I, J and C is clear. The accordance of "mutuality status" with coefficient of "implication" is well established. The relation between MS and J is slight and does not exist with C. This means that the more individuals are associated, the more they tend to judge adequately the mutualities they exchange with others, but that they do not develop a better idea of their own sociometric status than the isolated individuals. This shows how necessary it is, in sociometric research, to secure, as Moreno pointed out several times, the active participation of the subjects and to inform them of their exact interpersonal importance.

PSYCHOLOGICAL AND SOCIOLOGICAL INFLUENCES ON SOCIOMETRIC DETERMINISM

In order to acquire further possibilities of explanation on the sociometric process under study, psychological and sociological data has been

secured by different means: personality inventories, near-sociometric tests, rating-scales, interviews, questionnaires, inquiries, etc. This data has been compared to the sociometric results previously obtained.

Certain aspects, more psychological in nature, must be studied in the first place:

Personality status. The 35 subjects were tested with the Bernreuter's Personality Inventory, in order to investigate the possible incidences of character on sociometric status. We may conclude from the results that:

1.—As far as each of the six traits are concerned (emotional stability, self-sufficiency, intraversion-extraversion, ascendance-submission, sociability, self-confidence), the group is distributed regularly at all levels of the scales. As a whole, these officers do not differ from an ordinary adult population and do not present special personality characteristics or behavior patterns towards disorders or equilibrium).

2.—One personality trait only, the "emotional stability" (as represented by B_1 , B_3 and F_1 scales, appears to be connected with sociometric status. A relation of .467 (statistically significant) exists between the distribution of this trait and the distribution of "intercriterial mutuality status". Thus we may say that individuals "emotionally stable" are more associated than others. The scales of "ascendance-submission" and of "sociability" do not give any significant results. As a whole, it seems that personality differences play hardly any role in sociometric determinism. The sociotelic preoccupations surpass individual considerations (individual affective comfort) and help towards reducing interpersonal conflicts of character: the individual sacrifices himself for the benefit of the group.

Leadership status. The near-sociometric technique of rating-scale was used. The subjects were first asked to point out all the fellow-officers they believed able to carry out the role of chief-of-staff at headquarters and secondly the four officers most able to succeed in this job. An index of leadership was computed (sum of free and preference designations) and compared (point biserial correlation because of the abnormally distributed dichotomy of leaders and non-leaders)¹² with the "mutuality status" and the "polarization status". With the "intercriterial mutuality status", the relation was of .483 only, versus .804 between "leadership status" and "polarization status". This result conforms the hypothesis of prestige causality in polarization process. Do the reciprocations in such a leadership rating-scale appear with a significant frequency, showing trends of mutual

¹² R. L. Thorndike, "Tests and personnel selection measurement techniques", 1949.

admiration or antagonism between leaders? This is not the case: 13 observed intercriteria reciprocations (free and preference criteria) with an expected frequency of 17 (χ^2 not significant). We may conclude to a general indifference, to the absence of closed up networks and rivalry between leaders.

Constructivity status. The subjects were asked the following question: "In the course of group discussions, presided over by your instructor, which are, in your opinion, those of your fellow officers who provide the most frequently the most constructive data and remarks, regardless of their technical specialization."

A dichotomy between "constructive" and "non-constructive" officers was compared to "polarization status". The "constructive" officers seem to be chosen more often, although their superiority was not firmly established ($P = .05$). The analysis of distribution of reciprocated ratings inside each sub-group reveals that none of these develop preferential trends or internal antagonism. As in the case of leadership, there is no tendency towards formation of "cliques" or rivalry between individuals.

Technical and cultural prestige. Another rating-scale deals with technical and cultural prestige. The questions asked were as follows:

"Amongst all your fellow-officers of the four sub-groups of this course, which are those you spontaneously contacted to ask explanations about your work?"

"Amongst all your fellow-officers of the four sub-groups of this course, which are those whom you more particularly contacted to ask for their advice and to know their opinion about some general problem of your work?"

The relation between prestige status (both technical and cultural) and polarization status is high: .717 (point biserial correlation) and confirms the hypothesis that the criteria used in the battery were highly sociotelic. Individuals technically competent and culturally clever, whose advices are of value and who are inclined to answer questions, occupy favorable sociometric positions. This brings to light an essential aspect of the authentic leader who must be both counsellor and able to solve difficulties. The conspicuous importance of the "prestige status" in sociometric process leads one to study the distribution of these requests for advice and explanation. Are these requests made according to a preferential system or are they indifferently distributed amongst all subjects? The computations of different χ^2 , necessary to answer this question, are summarized according to the following statistical procedure:

Sub-group No. I		fo	fe			
I/I		29	8,7	47,4	}	Total: 16,36
I/II		1	7,8	5,80		
I/III		3	8,7	3,74		
I/IV		1	8,7	6,82		
I/II+III+IV		5	25,2	16,00		
Total	=	47,4	+	16,36	=	63,76 (3df)
Intra/Extra	=	47,4	+	16,00	=	63,40 (1df) $P < .001$
Diff. external choices	=	16,36	-	11,00	=	0,36 (2df) non sign.
Sub-group No. II						
II/II		37	10,7	64,00	}	Total: 20,10
II/I		6	12,1	3,10		
II/III		1	12,1	10,20		
II/IV		3	12,1	6,80		
II/I+III+IV		10	36,3	19,00		
Total	=	64,0	+	20,1	=	84,10 (3df)
Intra/Extra	=	64,0	+	19,0	=	83,00 (1df) $P < .001$
Diff. external choices	=	20,1	-	19,0	=	1,1 (2df) non sign.
Sub-group No. III						
III/III		31	14,7	17,80	}	Total: 7,42
III/I		8	14,7	3,07		
III/II		11	13	0,31		
III/IV		7	14,7	4,04		
III/I+II+IV		26	42,4	6,34		
Total	=	17,80	+	7,42	=	25,22 (3df)
Intra/Extra	=	17,80	+	6,34	=	24,14 (1df) $P < .001$
Diff. external choices	=	7,42	-	6,34	=	1,08 (2df) non sign.
Sub-group No. IV						
IV/IV		45	15,2	58,42	}	Total: 20,48
IV/I		6	15,2	5,57		
IV/II		3	13,4	8,07		
IV/III		5	15,2	6,84		
IV/I+II+III		14	43,8	20,27		
Total	=	58,42	+	20,48	=	78,90 (3df)
Intra/Extra	=	58,42	+	20,27	=	78,69 (1df) $P < .001$
Diff. external choices	=	20,48	-	20,27	=	0,21 (2df) non sign.

The computed χ^2 (Intra/Extra) tests the hypothesis that the subjects do not ask explanations and advice more frequently inside their own group than outside. The results show without any doubts that the choices are made nearly exclusively inside the official sub-groups.

The computed χ^2 (Differences in external choices) tests the null hypothesis of indifference in the direction of external choices. This hypothesis cannot be discarded: no group is preferred and to be a member of one group or another is not an advantage.

As to the observed frequency of these consulting requests, the computation of the intercriteria (technical explanations and cultural advices) reciprocated choices indicates a very slight difference, not significant, with the expected frequency ($f_o = 38$) ($f_e = 30$). Thus this way of increasing cohesion by exchange of advices is rather neglected and leads to the general sociometric indifference already observed.

Common interests. The biographic inventory, the interviews, and a special interests questionnaire have provided data on the professional, cultural and leisure interests of the population studied. Sharing certain preferences might be a factor of sociometric rapprochement, and taking an interest in certain activities, studies or hobbies might contribute to enhance or diminish some individuals' prestige. In both cases, these underlying attitudes will certainly show up in some ways in ordinary behavior. To answer the question about the possible influence of interests on prestige, we must compare the personal "polarization status" of individuals who show such interests with the status of individuals who do not. As to the possibility of increased cohesion, due to sharing of interests, it is necessary to compare the ratio of intercriteria reciprocations exchanged between the individuals sharing a preference with the ratio of mutuality existing between individuals who do not share this preference and finally with the ratio of mutual exchanges between these two groups. Intercriteria mutuality points,

in the $\frac{N(N-1)}{2}$ squares of half the matrix are distributed as follows:

$$M = 9,47 \pm 3,27$$

$$\sigma = 19,05 \pm 2,30$$

In spite of the abnormality of this distribution (typical J-curve) the three following types of computations have been done: differences in individual exchanges within the two groups under consideration and differences in

¹³ As indicated further on.

individual exchanges between each of these two groups and intergroup individual exchanges. That is:

$$t_{1v.2} = \frac{M_1 - M_2}{\sqrt{\frac{1}{N_1^2} + \frac{1}{N_2^2}}}$$

$$t_{1v.1,2} = \frac{M_1 - M_{1,2}}{\sqrt{\frac{1}{N_1^2} + \frac{1}{N_1 N_2}}}$$

$$t_{2v.1,2} = \frac{M_2 - M_{1,2}}{\sqrt{\frac{1}{N_2^2} + \frac{1}{N_1 N_2}}}$$

The incidences of those of these interests on sociometric processes have been investigated. When asked which *job* they would prefer to undertake, in case of immediate dissolution of the army, the subjects named professions which can be divided into certain broad categories: engineering—technical teaching—scientific research—organization and management—private and profit business . . .

1. As far as "*engineering*" is concerned and non-engineering, the following results have been found:

- a) the common interests for "*engineering*" is a real factor of sociometric rapprochement ($t = 9,86$ for 36 degrees of freedom);
- b) not sharing an interest for an engineering job is not a factor in promoting cohesion.

2. As far as "*technical teaching*" interests are concerned no significant differences have been found. It seems that the pedagogical attitude does not correspond here to a job sufficiently constructive.

3. People who voted for "*scientific research*" do not exchange between themselves preferential mutualities. It seems that the sociometric battery referred to more concrete and practical work than pure research.

4. Is to be interested in "*management*" (industrial organization) a sign of superiority? This profession, generally considered as a very difficult one, does not lead to any difference in "prestige status".

5. Is interest for "*private business*", that is, for profit, a handicap for individuals belonging to a traditionally disinterested corps such as the army? No significant difference was found here.

As regards their cultural and leisure interests, the subjects have been divided into broad categories. Only a few of the answers have been studied: theoretical science—applied sciences—practical mechanical hobbies¹⁴—artistic pastimes.

¹⁴ Radio, car repairs, tools, electrical fittings, technical designs, etc.

1. The influence of "*theoretical science*" interests upon individuals sharing them gave the following results:

$N_T = 12$ $N_{nT} = 23$	M_{nT}	$M_{T,nT} = 6,54$
$M_T = 12,82$	4,44 ($t=2,48$) $P < .02$	6,28 ($t=3,20$) $P < .001$
$M_{nT} = 8,38$		1,84 ($t=1,38$) $P > .05$

Thus, the common interest for theoretical science is a strong factor of relative isolation but does not constitute in itself for people sharing this disinterest a factor of increased cohesion.

2. Analysis of the influence of common interests in "*applied sciences*" brings exactly the same kind of results as for "pure science".

3. "*Practical mechanical hobbies*", symptomatic of technical interests, reinforce cohesion amongst individuals who share it. Disinterest for this pastime is a sociometric handicap without being a negative factor of increased integration.

4. Interests for *arts* is, as far as this population is concerned a factor of relative isolation, between people sharing this esthetic type of leisure. But these individuals are not significantly separated from the rest of the group considered as a whole. It is rather surprising to note that lack of mutuality exists mainly amongst the "artistically" minded individuals themselves. These interests seem to reinforce individualism.

$N_A = 10$ $N_{nA} = 25$	M_{nA}	$M_{A,nA} = 7,52$
$M_A = 3,29$	5,94 ($t = 2,88$) $P < .01$	4,23 non sign.
$M_{nA} = 9,23$		1,71 non sign.

Certain characteristics, more sociological in nature, have also been investigated in relation to their possible influences upon sociometric data. The *socio-economic statuses* of the subjects of this inquiry were too similar to allow any comparative analysis: recruiting and selection of officers in the French army being traditionally "bourgeois". As to the *size of family*, which might be considered as a possible index of egotism when there is

no children or only one, no significant difference was found. A very surprising result was obtained through the comparison between, "mutuality status" of officers having been *prisoners of war* (18 out of a total of 35) and those who had not been. One might have thought that this very long experience (4 years) endured in the hardest conditions, would have been a good training in social relationship. That was not the case, and the ex-POW did not show any superiority in "mutuality status". This is partially due to the sociotelic nature of the test employed which did not ask for social plasticity but for collective efficiency.

It was interesting to see whether the individuals *mutual acquaintances*, prior to their entrance in this school, has influenced the "intercriterial mutuality status". The subjects were asked about four types of possible acquaintances: same school or same military unit—occasional and off-duty contacts—same military work performed together—personal relations as friends. An individual score of previous acquaintances was computed on the basis of the responses to these four questions, and compared to the "mutuality status". A correlation of $-.051$ was found. We may conclude that the fact of knowing and being known, prior to the real acquaintance they might have made of one another at the school, exerts absolutely no influence on any officer's future sociometric position. Bad or good reputation does not come into account if it concerns aspects of personality irrelevant to the success of the group activities.¹⁵ It is often thought that acquaintances made prior to the entrance into some kind of group will influence associations in this group. This presumption must be discarded. The appreciations about their values made by members of a group about one another are reconsidered when the choice is about to be made, often discarded to the benefit of the sole consideration of the collective efficiency criterion proposed. One may say that personal interests, closely bound to the wish for collective efficiency, influence in an objective way the interpersonal attitudes and that the appreciations are stripped off the cast of habits and sentimentalism.

Has a *common attendance to certain schools* (civil or military) created some particular networks? This was investigated for individuals issued from

¹⁵ Furthermore, the subjects showed a marked tendency to escape sociometric questions by pretending they did not know one another. A glance at the diagram of previous mutual acquaintances, carefully controlled by data collected through interviews and biographic inventories, will show this assertion does not hold at this stage. We shall see further on that the range and frequency of contacts during the course are equally important.

the "Ecole Polytechnique" whose very high scientific and technical status is generally considered as a sufficient motive for exaggerated pride and self-admiration. In fact, the polarization status of this category of officers is not significantly higher than that of officers having attended other technical schools of less reputation. Between themselves, the 13 officers issued from "Ecole Polytechnique" do not develop any trend of internal preference. So we can conclude that the "Polytechnicians" do not enjoy a particular prestige among their fellow-officers and that they do not set up an exclusive clique of mutual admiration and scientific snobism.¹⁶

Different results have been found as regards the *common attendance to technical schools*. Two cases were thought interesting. The first one concerns the 14 subjects having attended together the "Ecole Nationale Supérieure d'Armement" (1947-48). These subjects do not develop between them a preference trend of intercriteria mutuality as compared with the exchanges of the rest of the group. But these two sub-groups develop between them a very low individual ratio of intercriteria reciprocation statistically significant of mutual isolation ($t = 3,86$). As regards the officers having attended the "Ecole Supérieure d'Electricité", the common attendance is a factor firmly established of sociometric differentiation. The mutual exchanges internal to the sub-group of such subjects is very high compared to those developed by the rest of the group and compared to those existing between these two sub-groups.

One of the most important influences on sociometric process seems to be the "*official sub-group membership effect*". The fact that these 35 officers have been segregated in four study-groups has played a decisive role in the distribution of intercriteria mutualities. The 4.849 reciprocations points are so divided: 2.708 points for internal mutualities within the four study-groups (individual mean = 19,91) and 2.141 points for external mutualities between the four study-groups (individual mean = 4,66). The difference between these two values is highly significant ($P < .001$). The cleavages between sub-groups is very strong. As to the level of integration, the four study-groups can be listed as follows:

Study-group	No. II	= 25,2
"	No. IV	= 22,4
"	No. I	= 19,8
"	No. III	= 16,2

¹⁶ Identical results were found for two other schools: St. Cyr (well known military school) and "Ecole des Arts et Métiers" (renowned civil technical school). We must suppose that the eventuality of a conformism resulting from a common attendance to some schools has lessened with time, since the subjects have left those schools nearly ten years ago.

Is this internal concentration of the mutualities due to special habits or rules promoting the separation of the study-groups in this military school? Two questions (rating-scale) have been devised to answer this question. They are as follows:

"Amongst all your fellow-officers of the four sub-groups, which are those with whom you have had, since the beginning of the course, the most fortuitous direct contacts, regardless of those brought about by your common work?"

"Which are, amongst all your fellow-officers of the four sub-groups, those with whom you deliberately developed personal contacts, regardless of your common work?"

The statistical analysis of the distribution of responses to these questions shows that the study-group No. II alone shows a tendency towards preference internal contacts (both for "direct fortuitous contacts" and "personal deliberate contacts"). The χ^2 between internal and external "direct contacts" for instance, is 6.68, significant at $P < .01$ for 1 df. The three other study-groups have no inside or outside preference in both types of contacts.

Are the subjects conscious of this indifferentiation? Are they conscious of the fact that in general, they have no preference as regards contacts and that they spread out well outside their own study-group? We may answer this question by computing the observed frequency of reciprocated contacts, considered as an index of mutuality consciousness. This was done under the concept of intercriteriality between the two types of contacts and the results indicated a slight trend of unconsciousness but not statistically significant (94 observed intercriteria reciprocations of contacts against 106 by chance. We must then conclude to indifference. The subjects are not specially conscious or unconscious of their general contact expansion throughout the whole four groups.

The phenomenon of "group impregnation" is not due to special instructional or military segregation, to special group prestige, to unconsciousness of possibility of expansion outside the sub-groups. It seems to be relevant to the psychological timidity of the subjects and to their lack of training in interpersonal relations.

We must now solve another problem. Are collective work habits within each study-group able to explicit their cohesive differentiation? Two questions have been devised to investigate this possible influence or "group-impregnation":

"Which are the officers of your own sub-group with whom you are used to work in team when the instructor chooses them himself?"

"Which are the officers of your own sub-group with whom you usually work in team when you are allowed to choose them yourself?"

Both the aspects of these questions: free or compulsory association for collective work showed no difference between the four sub-groups. It is not possible to explain their differences in cohesive intensity this way.

All these results indicate clearly that the "group impregnation" phenomenon exists independently of special social circumstances. This proves that any arrangement of group creates in itself an internal and rather unconscious trend of artificial cohesion. Thus it is very dangerous in any case, to let this phenomenon develop without control. It is a waste of time and social energy. The sociometric reconstruction alone is able to make this impulse profitable. The individuals of a group must participate consciously to this reconstruction and be distributed in the most proper way in order to get a benefit out of the group impregnation phenomenon in a meaningful and constructive sense.

The clinical viewpoint has not been neglected in this study and it has contributed partially to the explanation of sociometric determinism.

The interviews have been the occasion for asking the 35 subjects the different motives warranting each of their choices either positive or negative. This investigation has been rather difficult to conduct for several reasons: the officers showed strong reluctance to show the reasons for negative choices; they were embarrassed when asked to give accurate reasons for their positive choices. They were not used to think seriously about these problems and lacked precision and adequacy in their psychological vocabulary. Nevertheless, each officer was described by several of his fellow-officers (from 5 to 13, mean = 8). According to the frequency and seriousness of these appreciations, the 35 subjects were divided into six different qualitative categories:

1.—*Highly appreciated* (5 officers): appreciative remarks, no restriction. As an example, we reproduce the list of reasons for choices of 11 officers, relative to subject No. 43: "gay—optimistic—full of go—frank and unsophisticated—good pal—always cooperates—calm—methodical—clear thinking—curious minded—hard working—very efficient—technically very competent—takes great interest in the course—takes decisions—has initiative—when in command of his fellow-officers, is tactful and efficient."

2.—*Appreciated* (5). Some restrictions, but made by those only who already passed some appreciative remarks about them. As an example, the appreciative reasons and the two restrictions made by 11 officers on subject No. 23 are: "frank—faithful—gay—calm—level-headed—common sense—strong-minded—open-minded—intelligent and logical—helpful—cooperative—(sometimes touchy—boasts fairly often).

3.—*Moderately appreciated* (6): restrictions were made both by appreciative and by indifferent fellow-officers. Case No. 19 for instance (from 10 fellow-officers): "level-headed—discreet—clear thinker—works quickly—technically efficient—broad-minded—can endure strenuous work—helpful—cooperative—full of go and authority—(too reserved—not enough go)."

4.—*Indifferentiated* (8). Officers more or less equally appreciated and unappreciated.

5.—*Unappreciated* (5): generally unappreciated but some appreciative remarks: Case No. 15 (from 11 fellow-officers): "bad temper—suspicious—fussy—cutting—destructive remarks—has a kink in his mind—not methodical—avoid responsibilities—(conscientious—careful with his work—has authority)."

6.—*Highly unappreciated* (6). No appreciative remarks whatsoever. As an example, subject No. 16 (5 judges) is described as: "sour—muddle headed—not intelligent, unefficient—not technically competent—no intellectual originality—learns by heart—not disciplined—not frank."

Is this classification coherent with the sociometric data? The triserial coefficient of correlation¹⁷ between the "polarization status" of the "appreciated officers" (categories 1, 2, 3), the indifferentiated (category 4) and the unappreciated (5, 6) shows a high positive correlation of .844 between qualitative psychological judgments and quantitative sociometric data.

SOCIOMETRIC RECONSTRUCTION

To collect the sociometric data of a community, to observe the underlying psychological and sociological factors of the resulting process, does not provide sufficient concrete information to officials anxious to improve the output of this community. Some practical means of regrouping, some rules for collective reconstruction must be proposed especially in the case of this military school, where urgent and concrete considerations are prominent.

Two basic ideas might govern this rearrangement procedure, dependent on the aims to be attained. First of all, if the commanding officers wish to develop the general cohesion of the entire group under study, the construction of sub-groups of relatively equal integration and showing no antagonism between them must be undertaken. This can be achieved by a more or less regular and uniform distribution of "polarization statuses" and "mutuality statuses" all over the area of their respective matrices

¹⁷ J. Nathan: *Psychometrika*, No. 11, 1946.

(that is: maintaining the different highly cohesive networks and especially the inter-official sub-groups associations, but avoiding the concentration of choices and reciprocations along the matrix diagonal). Furthermore, some special arrangements might improve this method of developing the "esprit de corps" throughout the group. For instance, each network would include only one leader to avoid any possibility of rivalry between them. "Isolated" individuals might be placed as satellites of those leaders who do not disapprove of them. Or, two highly associated individuals might be purposely separated in order to increase directly and indirectly the trend of association between the two groups to which they belong. This idea of improving the general integration of the group, valid in many other instances, seems to be of little interest in the present case, since the collectivity under study is only temporarily associated and since the aims to be achieved are: intense coaching and training of small groups to team-work. If, then, on the other hand we wish to set up independent sub-groups, highly cohesive, without taking into consideration the possible antagonism that might develop between them, we must adopt a reconstruction procedure which, although often considered as dangerous owing to its effect of reinforcing the trend of group competition, seems to be the most adequate here, in view of the aims of this particular military school. Practically, it means the rearrangement of the official sub-groups, by minimizing one of the basic matrices ("polarization" or "mutuality").¹⁸ But this method of formation of groups, achieved by concentrating the choices and reciprocations along the matrix main diagonal, if theoretically able to show the networks and cleavages between them, requires a cumbersome and rather uncontrolled computation work (either by simultaneous changing of rows and columns or by the proposed matrix computation).¹⁹ Above all, this way of reconstruction seems to be a rigid system, consisting only in the strict observation of sociometric data, leading obviously to an improvement as regards the previous and official situation, but not in an exhaustive way the whole of the real and profound richness of sociometry.

Thus, beyond the above mentioned opposition between general and partial cohesion, another method, more genuinely sociometric, more pedagogically effective and more suitable to concrete and varied collective situations is to be proposed. It is based upon the principle of differential distribution of team duties rather than of reconstruction of new permanent and official sub-groups and utilizes the generalized concept of inter-

¹⁸ See Katz and Forsythe: "A matrix approach to sociometric data", *SOCIOMETRY*.

¹⁹ See preceding note.

criteriality. The general purpose is then to provide such numerous and varied possibilities of cohesive teams to the officers in command and to the instructors that they will be able, in relation to specific military, technical and instructional circumstances, to assign certain tasks or duties to the more adequate teams, taking into account their different sizes and levels of integration. But what kind of team will be considered as cohesive? The required condition to be met for such a team is that each member exchanges with all the others at least one reciprocation (criterial or intercriteria).

This means that within a cohesive team, none of the members may be indifferent to any of the others.

Under such conditions, how can the collective work be planned? A first approach may consist in leaving untouched the official sub-groups as they were originally formed, to find out their different possibilities for setting up cohesive teams and to list them by size and integration intensity. Within each of the four sub-groups matrices, the subjects have to be moved towards the diagonal until we obtain relative positions so as to provide the least possible number of empty "row and column". The table below indicates this practical way of finding out the cohesive teams, their frequency of occurrence as regards their sizes and their listing by levels of integration:

This approach has practical advantages. It does not disturb the military instruction routine and leaves under the supervision of instructors the individuals they already know. But in spite of the fact that work planning is still possible, that the collective tasks of the curriculum can be assigned to the different intragroup cohesive teams and that a system of permutation from team to team may be devised for each individual according to his sociometric position, this reform remains incomplete and must be extended to the whole group. Such a generalization must be made for several reasons. Some subjects are not really members of their official sub-groups and belong elsewhere, owing to a lot of intercriteria associations. The possibilities of intragroup teams are limited in size and in level of cohesive density. The risk of too intense cleavages between sub-groups is enhanced by this method of intragroup limited training to collective effort and must be reduced. The individual opportunities to develop social experiences by successive changes to differently cohesive teams must be provided by a generalized procedure. Furthermore, this extension will simultaneously solve the problem of permanent group reconstruction and solve the question relative to sub-group antagonism and general "esprit de corps".

What are then the possibilities of cohesive teams offered to the commanding officers when the group is considered as a whole? If we neglect

TABLE OF COHESIVE TEAMS
INSIDE OFFICIAL SUB-GROUPS

**RÉPARTITION DES ÉQUIPES HOMOGÈNES
DANS LE CADRE DES GROUPE FORMELS**

X = 2 **X = 3**

X = 2

12-13-14-15 = 409

16-17-18 = 410

19-20-21 = 411

22-23-24 = 412

25-26-27 = 413

28-29-30 = 414

31-32-33 = 415

34-35-36 = 416

37-38-39 = 417

40-41-42 = 418

43-44-45 = 419

46-47-48 = 420

49-50-51 = 421

52-53-54 = 422

55-56-57 = 423

58-59-60 = 424

61-62-63 = 425

64-65-66 = 426

67-68-69 = 427

70-71-72 = 428

73-74-75 = 429

76-77-78 = 430

79-80-81 = 431

82-83-84 = 432

85-86-87 = 433

88-89-90 = 434

91-92-93 = 435

94-95-96 = 436

97-98-99 = 437

100-101-102 = 438

103-104-105 = 439

106-107-108 = 440

109-110-111 = 441

112-113-114 = 442

115-116-117 = 443

118-119-120 = 444

121-122-123 = 445

124-125-126 = 446

127-128-129 = 447

130-131-132 = 448

133-134-135 = 449

136-137-138 = 450

139-140-141 = 451

142-143-144 = 452

145-146-147 = 453

148-149-150 = 454

151-152-153 = 455

154-155-156 = 456

157-158-159 = 457

160-161-162 = 458

163-164-165 = 459

166-167-168 = 460

169-170-171 = 461

172-173-174 = 462

175-176-177 = 463

178-179-180 = 464

181-182-183 = 465

184-185-186 = 466

187-188-189 = 467

190-191-192 = 468

193-194-195 = 469

196-197-198 = 470

199-200-201 = 471

202-203-204 = 472

205-206-207 = 473

208-209-210 = 474

211-212-213 = 475

214-215-216 = 476

217-218-219 = 477

220-221-222 = 478

223-224-225 = 479

226-227-228 = 480

229-230-231 = 481

232-233-234 = 482

235-236-237 = 483

238-239-240 = 484

241-242-243 = 485

244-245-246 = 486

247-248-249 = 487

250-251-252 = 488

253-254-255 = 489

256-257-258 = 490

259-260-261 = 491

262-263-264 = 492

265-266-267 = 493

268-269-270 = 494

271-272-273 = 495

274-275-276 = 496

277-278-279 = 497

280-281-282 = 498

283-284-285 = 499

286-287-288 = 500

289-290-291 = 501

292-293-294 = 502

295-296-297 = 503

298-299-300 = 504

301-302-303 = 505

304-305-306 = 506

307-308-309 = 507

310-311-312 = 508

313-314-315 = 509

316-317-318 = 510

319-320-321 = 511

322-323-324 = 512

325-326-327 = 513

328-329-330 = 514

331-332-333 = 515

334-335-336 = 516

337-338-339 = 517

340-341-342 = 518

343-344-345 = 519

346-347-348 = 520

349-350-351 = 521

352-353-354 = 522

355-356-357 = 523

358-359-360 = 524

361-362-363 = 525

364-365-366 = 526

367-368-369 = 527

370-371-372 = 528

373-374-375 = 529

376-377-378 = 530

379-380-381 = 531

382-383-384 = 532

385-386-387 = 533

388-389-390 = 534

391-392-393 = 535

394-395-396 = 536

397-398-399 = 537

400-401-402 = 538

403-404-405 = 539

406-407-408 = 540

409-410-411 = 541

412-413-414 = 542

415-416-417 = 543

418-419-420 = 544

421-422-423 = 545

424-425-426 = 546

427-428-429 = 547

430-431-432 = 548

433-434-435 = 549

436-437-438 = 550

439-440-441 = 551

442-443-444 = 552

445-446-447 = 553

448-449-450 = 554

451-452-453 = 555

454-455-456 = 556

457-458-459 = 557

460-461-462 = 558

463-464-465 = 559

466-467-468 = 560

469-470-471 = 561

472-473-474 = 562

475-476-477 = 563

478-479-480 = 564

481-482-483 = 565

484-485-486 = 566

487-488-489 = 567

490-491-492 = 568

493-494-495 = 569

496-497-498 = 570

499-500-501 = 571

502-503-504 = 572

505-506-507 = 573

508-509-510 = 574

511-512-513 = 575

514-515-516 = 576

517-518-519 = 577

520-521-522 = 578

523-524-525 = 579

526-527-528 = 580

529-530-531 = 581

532-533-534 = 582

535-536-537 = 583

538-539-540 = 584

541-542-543 = 585

544-545-546 = 586

547-548-549 = 587

550-551-552 = 588

553-554-555 = 589

556-557-558 = 590

559-560-561 = 591

562-563-564 = 592

565-566-567 = 593

568-569-570 = 594

571-572-573 = 595

574-575-576 = 596

577-578-579 = 597

580-581-582 = 598

583-584-585 = 599

586-587-588 = 600

589-590-591 = 601

592-593-594 = 602

595-596-597 = 603

598-599-600 = 604

601-602-603 = 605

604-605-606 = 606

607-608-609 = 607

610-611-612 = 608

613-614-615 = 609

616-617-618 = 610

619-620-621 = 611

622-623-624 = 612

625-626-627 = 613

628-629-630 = 614

631-632-633 = 615

634-635-636 = 616

637-638-639 = 617

640-641-642 = 618

643-644-645 = 619

646-647-648 = 620

649-650-651 = 621

652-653-654 = 622

655-656-657 = 623

658-659-660 = 624

661-662-663 = 625

664-665-666 = 626

667-668-669 = 627

670-671-672 = 628

673-674-675 = 629

676-677-678 = 630

679-680-681 = 631

682-683-684 = 632

685-686-687 = 633

688-689-690 = 634

691-692-693 = 635

694-695-696 = 636

697-698-699 = 637

700-701-702 = 638

703-704-705 = 639

706-707-708 = 640

709-710-711 = 641

712-713-714 = 642

715-716-717 = 643

718-719-720 = 644

721-722-723 = 645

724-725-726 = 646

727-728-729 = 647

730-731-732 = 648

733-734-735 = 649

736-737-738 = 650

739-740-741 = 651

742-743-744 = 652

745-746-747 = 653

748-749-750 = 654

751-752-753 = 655

754-755-756 = 656

757-758-759 = 657

760-761-762 = 658

763-764-765 = 659

766-767-768 = 660

769-770-771 = 661

772-773-774 = 662

775-776-777 = 663

778-779-780 = 664

781-782-783 = 665

784-785-786 = 666

787-788-789 = 667

790-791-792 = 668

793-794-795 = 669

796-797-798 = 670

799-800-801 = 671

802-803-804 = 672

805-806-807 = 673

808-809-810 = 674

811-812-813 = 675

814-815-816 = 676

817-818-819 = 677

820-821-822 = 678

823-824-825 = 679

826-827-828 = 680

829-830-831 = 681

832-833-834 = 682

835-836-837 = 683

838-839-840 = 684

841-842-843 = 685

844-845-846 = 686

847-848-849 = 687

850-851-852 = 688

853-854-855 = 689

856-857-858 = 690

859-860-861 = 691

862-863-864 = 692

865-866-867 = 693

868-869-870 = 694

871-872-873 = 695

874-875-876 = 696

877-878-879 = 697

880-881-882 = 698

883-884-885 = 699

886-887-888 = 700

889-890-891 = 701

892-893-894 = 702

895-896-897 = 703

898-899-900 = 704

901-902-903 = 705

904-905-906 = 706

907-908-909 = 707

910-911-912 = 708

913-914-915 = 709

916-917-918 = 710

919-920-921 = 711

922-923-924 = 712

925-926-927 = 713

928-929-930 = 714

931-932-933 = 715

934-935-936 = 716

937-938-939 = 717

940-941-942 = 718

943-944-945 = 719

946-947-948 = 720

949-950-951 = 721

952-953-954 = 722

955-956-957 = 723

958-959-960 = 724

961-962-963 = 725

964-965-966 = 726

967-968-969 = 727

970-971-972 = 728

973-974-975 = 729

976-977-978 = 730

979-980-981 = 731

982-983-984 = 732

985-986-987 = 733

988-989-990 = 734

991-992-993 = 735

994-995-996 = 736

997-998-999 = 737

1000-1001-1002 = 738

1003-1004-1005 = 739

1006-1007-1008 = 740

1009-1010-1011 = 741

1012-1013-1014 = 742

1015-1016-1017 = 743

1018-1019-1020 = 744

1021-1022-1023 = 745

1024-1025-1026 = 746

1027-1028-1029 = 747

1030-1031-1032 = 748

1033-1034-1035 = 749

1036-1037-1038 = 750

1039-1040-1041 = 751

1042-1043-1044 = 752

1045-1046-1047 = 753

1048-1049-1050 = 754

1051-1052-1053 = 755

1054-1055-1056 = 756

1057-1058-1059 = 757

1060-1061-1062 = 758

1063-1064-1065 = 759

1066-1067-1068 = 760

1069-1070-1071 = 761

1072-1073-1074 = 762

1075-1076-1077 = 763

1078-1079-1080 = 764

1081-1082-1083 = 765

1084-1085-1086 = 766

1087-1088-1089 = 767

1090-1091-1092 = 768

1093-1094-1095 = 769

1096-1097-1098 = 770

1099-1100-1101 = 771

1102-1103-1104 = 772

1105-1106-1107 = 773

1108-1109-1110 = 774

1111-1112-1113 = 775

1114-1115-1116 = 776

1117-1118-1119 = 777

1120-1121-1122 = 778

1123-1124-1125 = 779

1126-1127-1128 = 780

1129-1130-1131 = 781

1132-1133-1134 = 782

1135-1136-1137 = 783

1138-1139-1140 = 784

1141-1142-1143 = 785

1144-1145-1146 = 786

1147-1148-1149 = 787

1150-1151-1152 = 788

1153-1154-1155 = 789

1156-1157-1158 = 790

1159-1160-1161 = 791

1162-1163-1164 = 792

1165-1166-1167 = 793

1168-1169-1170 = 794

1171-1172-1173 = 795

1174-1175-1176 = 796

1177-1178-1179 = 797

1180-1181-1182 = 798

1183-1184-1185 = 799

1186-1187-1188 = 800

1189-1190-1191 = 801

1192-1193-1194 = 802

1195-1196-1197 = 803

1198-1199-1200 = 804

1201-1202-1203 = 805

1204-1205-1206 = 806

1207-1208-1209 = 807

1210-1211-1212 = 808

1213-1214-1215 = 809

1216-1217-1218 = 810

1219-1220-1221 = 811

1222-1223-1224 = 812

1225-1226-1227 = 813

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1438-1439-1440 = 884

1441-1442-1443 = 885

1444-1445-1446 = 886

1447-1448-1449 = 887

1450-1451-1452 = 888

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1456-1457-1458 = 890

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1471-1472-1473 = 895

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1489-1490-1491 = 901

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1549-1550-1551 = 921

1552-1553-1554 = 922

1555-1556-1557 = 923

1558-1559-1560 = 924

1561-1562-1563 = 925

1564-1565-1566 = 926

1567-1568-1569 = 927

1570-1571-1572 = 928

1573-1574-1575 = 929

1576-1577-1578 = 930

1579-1580-1581 = 931

1582-1583-1584 = 932

1585-1586-1587 = 933

1588-1589-1590 = 934

1591-1592-1593 = 935

1594-1595-1596 = 936

1597-1598-1599 = 93

as too small an association, the 199 teams composed of two individuals (1574 intercriteria reciprocations, as previously seen), we still find the existence of 300 intergroup cohesive triangles (numbered by the practical matrix operation already indicated). Added to the 74 intragroup cohesive triangles, they provide a general total of 374 triangular teams. The intensity of integration of these associations as represented by the sum of intercriteria mutuality points exchanged by the three members of each team is so distributed:

Intercriteria reciprocation points intervals	Intragroup	Intergroup	Total number of possible triangular teams
(maximum = 546)			
300-200	7	2	9
200-150	11	9	20
150-120	22	27	49
120-100	6	21	27
100-80	7	39	46
80-50	15	85	100
50-20	5	86	91
20-6	1	31	32
(minimum)			
	74	300	374

The quadrangular teams have been counted by the same method, 33 intragroup and 298 intergroup squares gave a total of 331 teams of this size, which seems the most suitable for collective work in the case studied. In how many teams can an individual be integrated? This is shown in the table below:

Subject No.	Intra	Inter	Total	Subject No.	Intra	Inter	Total
11	0	19	19	31	7	29	36
12	0	1	1	32	1	0	1
13	2	2	4	33	5	148	153
14	2	1	2	34	0	0	0
15	0	1	1	35	2	5	7
16	0	5	5	36	1	11	12
17	1	30	31	37	7	54	61
18	2	7	9	38	4	38	42
19	1	23	24	39	5	81	86
21	4	14	18	41	13	78	91
22	1	14	15	42	13	73	86
23	0	24	24	43	7	43	50
24	5	18	23	44	6	49	55
25	0	2	2	45	7	37	44
26	5	94	99	46	12	68	80
28	5	125	130	47	0	4	4
29	4	61	65	48	1	9	10
				49	7	11	16

These results concerning triangular and quadrangular cohesive teams call for some remarks:

1. Both kinds of teams offer numerous possibilities of choices. Under certain circumstances, cohesion may be increased as in the case of a complex collective work which requires a high level of integration between members of a team; such difficult tasks will then be distributed to triangles or squares having a particularly high number of intercriteria points. It is the instructors' job to decide in each case the minimum level of cohesion required, as they plan the work of the course.
2. Each individual, except one (subject No. 34) can become a member of a quadrangular team. In particular, some subjects who could not be integrated in a quadrangular team within their own subgroup (subjects No. 11, 12, 15, 16, 23, 25, 47) can now become members of such a team.
3. We note important inter-individual differences as regards the opportunity of becoming members of a quadrangular team. Some subjects have so little possibilities of this kind that they surely cannot enter a larger cohesive team such as a pentagonal one; this is the case for subjects No. 12, 14, 15, 25, 32 (number of membership to quadrangular team inferior to 4). On the contrary, some subjects have a great deal of membership possibilities, such as subjects No. 33, 28, 26, 41. These facts must be taken into account in the general work-planning.
4. Apart from subjects No. 12, 14, 15, 25, 32, already eliminated from pentagonal teams, some others cannot enter a team of this size, in view of their sociometric positions. It is the case of subjects No. 13 and 47, whose number of quadrangular team membership is 4, i.e. the minimum required. If we proceed this way, step by step, we shall know, not only the number of possibilities for pentagonal, etc. teams but also the superior limit we can practically reach in size. This was done and revealed that "seven members" teams are the last possible solution: six teams of this size have been found which include more or less the same 14 individuals. No larger team can be obtained.
5. In view of these results, it seems that careful instruction planning does not consist only in distributing the collective work to be done in accordance to the complexity of the tasks, the sizes and intensities of the cohesive teams, but must also give to each subject and

particularly to rather isolated individuals the opportunity for training themselves to interpersonal relations through a system of successive transfers from one cohesive team to another. This therapeutic aspect increases the efficiency of the proposed method of sociometric reconstruction.

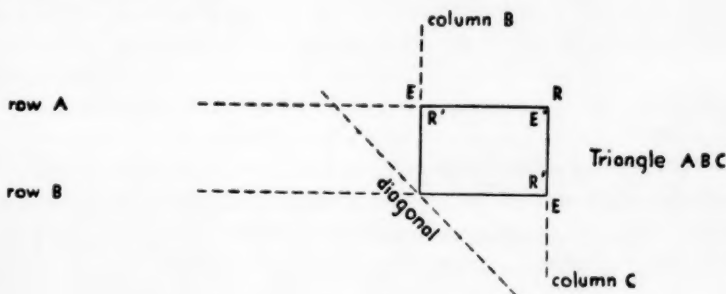
FURTHER RESEARCH

Apart from possible theoretical contributions, this inquiry²⁰ has led to several practical applications:

1. The sociometric procedure has proved to be an excellent selection tool. Polarization statuses and general end-of-course scores correlated at .907.
2. Certain findings which concern sociometric determinism, either positive or negative, have revealed the practical importance of such an analysis as regards both the reducing of prejudice and the rational construction of groups. Further researches are needed in this field and might be extended with profit to different military units (active service) in view of trying to set up a psychological and sociological military typology.
3. The system of distribution of collective work to cohesive teams under the regulation of a central course planning seems practicable and has been adopted by the officers in command.

Nevertheless, this inquiry is but a preliminary step in the study of cohesion in military team-work. It has been achieved under unfavorable circumstances: in particular, the investigations were carried out too much

²⁰ This inquiry has been greatly facilitated by the understanding shown by the officers in command of this military school. Acknowledgments are especially made to Professor G. Gurvitch, Director of the "Centre d'Etudes Sociologiques" for his constant help and advice. I wish to thank the research workers who contributed to this study: Dr. M. P. Schützenberger for his statistical participation and G. Lajoinie, A. Denner and A. Penso for field work.



from the outside and lack of time and reasons of discretion prevented the active participation of the subjects in sociometric reconstruction. No systematic planning for collective work was established and only a few experiences have been attempted. The statistical computations have been handicapped by the small range of the population.

Another study, more extensive, is now under way in the same school. It deals with a larger number of officers (100) and is to be carried out in the course of a whole year, thus allowing deep sociometric insight and active cooperation of the officers and their instructors. Team reconstruction in relation with work-planning throughout the course will be undertaken as soon as the first sociometric results are provided. Different experimentations are needed for purposes of comparison, as regards efficiency and improvement.

SOCIOMETRIC CENTER IN FRANCE

The "Groupe de Recherches et d'Applications Psychologiques et Sociologiques" in Paris reports its program:

During 1948:

A course at a Military School for Officers, given by P. H. Maucorps, entitled: "Psycho-sociological Military Reality and Problems of Morale".— This was a concise exposition of sociometric techniques (J. L. Moreno, H. H. Jennings); an example borrowed from Zeleny (morale). Published by the Ecole Supérieure de Guerre.

At the end of this exposition numerous questions were asked by the officer-listeners. The interest manifested has been so vivid that the suggestion was made by several officers to apply the sociometric tests to their own promotion, to the end that their periods of tactical and strategic training may be made more efficacious. The command of this school is undertaking to follow up on this project (see further in this report).

A conference at the *Musée de l'Homme* (Société des Océanistes) entitled: "Ethnologic Psychometry and Sociometry and Possibilities for Oceanic Applications", published in June, 1949, in the *Journal de la Société des Océanistes* (*Musée de l'Homme*) and partially extracted.

During 1949:

A course at a Military School for Officers, given by P. H. Maucorps, entitled: "Combat Morale and Functional Cohesion", theoretic summing up of sociometry and examples of military application (Jenkins, Zeleny, etc.). This course was published by the Ecole Supérieure de Guerre and appeared as an article in May, 1949, in the *Revue de la Défense Nationale*, Paris.

A series of three courses on sociometry of labor at the *Ministry of Labor*, included in the course on "Organization of Work and Industrial Psychology", taught to "Work Counsellors" by P. H. Maucorps (February-March, 1949).

A sociometric investigation for the subsequent 1949-1950 period is being planned by the *Ministry of Labor*.

A sociometric inquiry effected in December 1948 - January 1949 at the *Centre des Hautes Etudes Administratives* (twenty-five high functionaries of the State, subject to different ministerial administration and reunited for a period of four months to execute administrative work of general import together. Account in preparation.

Sociometric inquiry in a Military School for Officers (February-March, 1949) with thirty-five officer-technicians of various kinds of weapons. This inquiry has been inaugurated by a previous short exposition of sociometric methods and the results they can provide, to the subjects of this inquiry.

In the course of publication:

1. Sociometry study carried out during 1946 with one hundred and sixty pupils of the high schools of Paris competing for entrance to the Naval School.
2. An article dealing with industrial sociometry in the "*Revue du Travail*".
3. An article on sociometry in the schools in the journal "*Enfance*".
4. An article on sociometry in industry in the journal "*Travail et Méthodes*" (Chief Editor: P. H. Maucorps).

Work Projects:

1. The extension of sociometric inquiry in a Military School (officer tacticians).
2. Sociometry inquiry in a Military School.
3. Sociometric and psychometric research at the Ecole de Vitry (retarded children of victims of the French Resistance). This inquiry is conducted by arrangement with the Centre d'Etudes Sociologiques (Professor Georges Gurvitch) and of the psycho-biological laboratory of child study (Professor H. Wallon):

Sociometry
Psychodrama
Sociodrama

4. An investigation of industrial sociometry: workshops, apprenticeship schools, work counselors and committees of public works (Ministry for Labor).
5. An investigation of sociometry in the schools and pre-professional high schools in Paris, research on vocations, professional antagonisms, etc.

SOME ATTRACTION AND REPULSION PATTERNS AMONG JIBARO INDIANS¹

A Study in Sociometric Anthropology

BENGT DANIELSSON

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I

As often has been pointed out, the advance of sociology depends principally on the development of objective techniques of determining social interaction in human populations and on the formulation of universal laws for describing this interaction. The principal obstacle to the development of these new techniques and to the formulation of general laws is the difficulty of undertaking experiments. This difficulty is, of course, chiefly one of ethical attitude. Sociological experiments are not yet in public opinion regarded as naturally permissible as experiments in the natural sciences. This attitude is a real and considerable difficulty. The idea underlying the present study is that while we are waiting for a change of public opinion, sociometric studies among primitive peoples (the term "primitive" here of course meaning "not having a written language") might in some cases give us a substitute for experiments, or in any case that studies of this type might contribute to the basic work on sociological theory and method.

The characteristics to be sought among primitive peoples which would be favorable for the sociological researcher with the mentioned point of view in mind are the following:

1. *Relative isolation* from other primitive tribes and from other cultural groups, thus *limiting the number of disturbing influences*.
2. *Small number of individuals*, permitting not only a sampling, but *a complete canvass*.
3. *A simple social structure*, at least in comparison with the civilized

¹ The material for this study was collected during travels in Western Amazonas, October 1946 - January 1947, as a member of the Finnish-Swedish Amazon Expedition, and during a second visit to the same area in March - April 1948. Dr. George A. Lundberg, University of Washington, suggested the study to me, and together with Dr. Stuart Dodd, Washington Public Opinion Laboratory, has made many valuable suggestions. Dr. Rafael Karstein, University of Helsinki, Finland, specialist on the Jibaro anthropology and leader of the Finnish-Swedish Amazon Expedition, has supplied me with much information. For help in collecting material I am indebted to Father Juan Ghinassi and Sr. Guillermo Lopez, Chinimbi, Ecuador. I am also greatly indebted to Orabelle Connally for drawing the charts and to Lenore Dickson and Virginia Hertzler for critical and extensive proof reading of the manuscript and the proofs.

societies ("those having a written language"). The structure is generally simpler among primitive peoples of course principally due to the fact that *indirect* communication, in space and time, is very limited. As a consequence, in a primitive society *basic sociological patterns* underlying all human behavior could more easily be found.

As a primitive people, the Jibaro Indians from Western Amazonas, chosen for the present study, seem to fulfill these requirements.

II

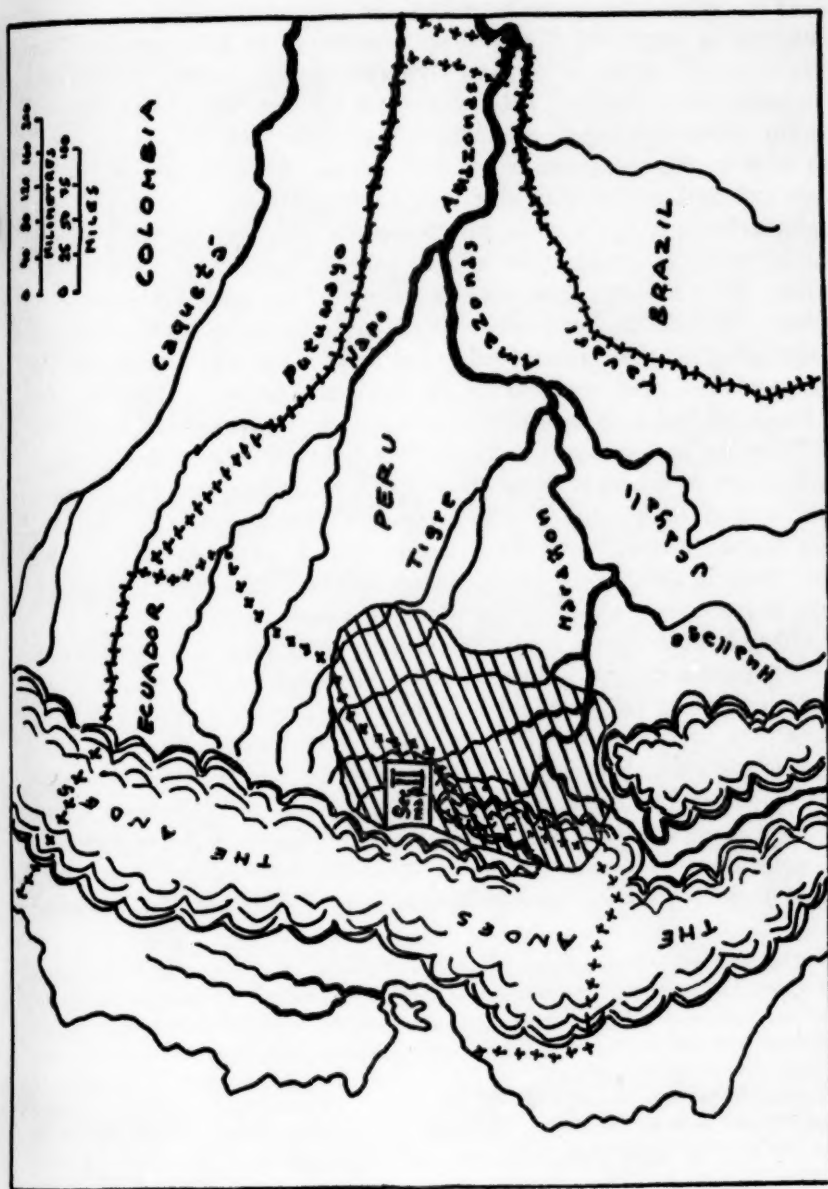
The location of the Jibaro Indians is shown on Map I. This region is mostly a plain land with dense tropical jungle and many rivers and streamlets. Some mountain offshoots from the Andes, however, are to be found in the western parts. The communications are difficult, and natural barriers divide the territory. The total number of the population is unknown, but a guess of something around 10,000 seems justified. The Jibaros are one of the few tribes in Western Amazonas that has managed to maintain their political and cultural independence. White settlements exist only along the fringe of the Jibaro country and in the form of some isolated garrisons on the Morona and Santiago rivers. On the whole the Jibaros have successfully resisted all civilizing impact.

The Jibaros are collectors of food, cultivators, hunters, and fishers. The staple food consists of manioc, plantain, and potato, to which occasionally is added game and fish. Pigs, fowls, and ducks are maintained as domesticated animals, but they are usually killed only at feasts and celebrations. Division of labor is practiced, the men doing the hunting, fishing, clearing of the fields and building of the houses, the women cultivating the fields and keeping the household.²

As the rains are very heavy and frequent the uppermost thin layer of humus is washed away from the fields in a few years time. Consequently the Jibaros stay in the same place only as long as the fields are able to produce crops, and then leave to find a new dwelling-place. (This seems to be the real reason for their semi-nomadic character, frequently ascribed to the so-called "wandering instinct.") Usually they move around within a very limited area.

The only social unit is the family, which term is used for describing all individuals related by birth or by intermarriage and living in the same house. Each such house forms an independent social, political and economic

² For a more complete and detailed description of the Jibaros, see Rafael Karsten: *The Head-Hunters of Western Amazonas*, Helsingfors, 1935.



MAP I
WESTERN AMAZONAS.
Shaded area inhabited by the Jibaros.

unit. The houses have large dimensions (fifty by one hundred feet is not an uncommon size), and a house may contain up to fifty persons. The family houses are scattered in sparse clusters along the rivulets. Two houses are seldom found together, and the distance between the separate houses generally varies from one to five miles. (The locations of each family house dealt with in this study are shown with Roman figures on Map II. The houses indicated are all that exist in the mapped area.)

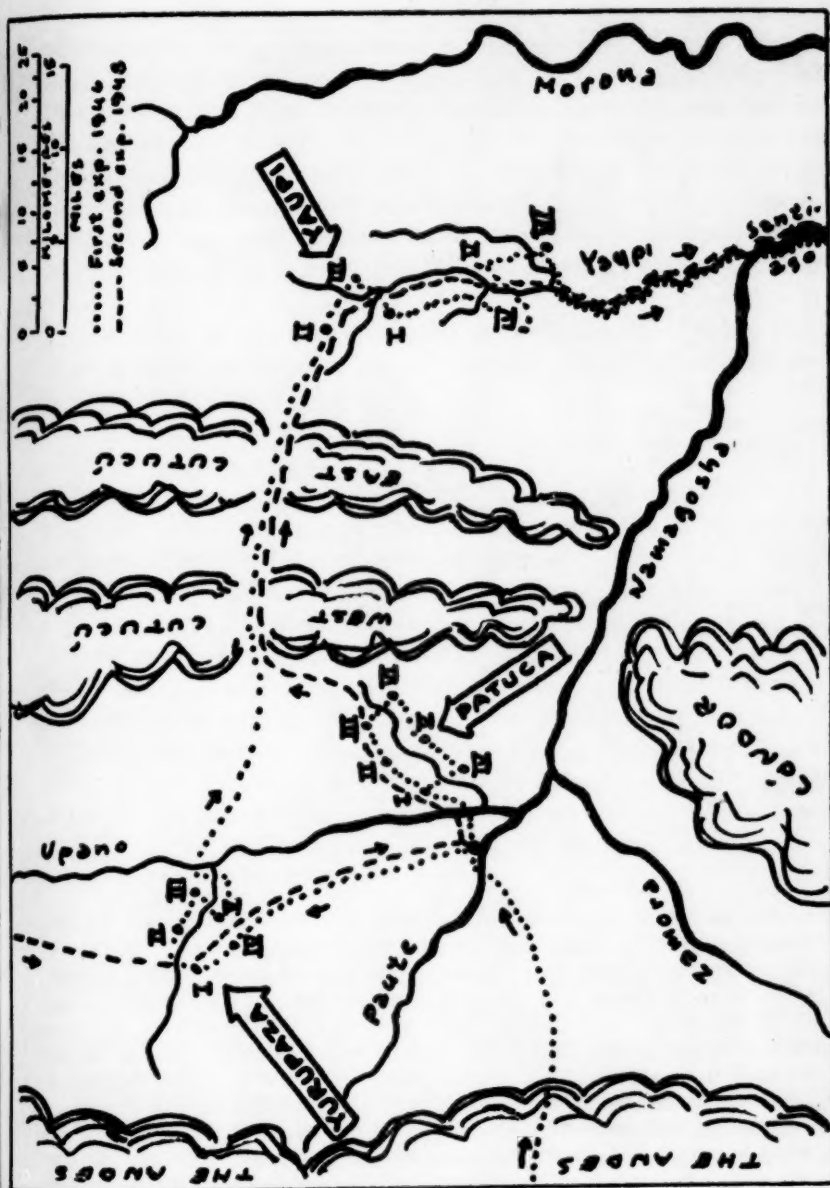
Each house-group is made up of various men and their wives and children. A usual combination is: the head of the family, some of his brothers and sons and some sons-in-law, each one with his wives and children. That the Jibaros practise polygamy seems to be easily explained by the fact that the continual wars and fights have greatly reduced the male population. The sex ratio for the adult population, for instance, for the groups studied is 69 men to 168 women. (See Table I).

There is no permanent chief for the different geographical groups. (Each cluster of houses is named after the rivulets where they are situated, as for instance the Patucas, the Yurupazas, the Yaupis.) The family head is the highest authority and his power is limited to the members of his house. Only in time of war are chiefs appointed for larger units, but their power is provisional and confined to the war-period only.

Great hostility exists generally among and between the various geographical groups, and wars of extermination are often waged. It is at these occasions that the head-trophies are taken and prepared, thus giving the Jibaros their popular name: The Head-Hunters of Western Amazonas.

The so-called "fight-instinct" has frequently been mentioned as the cause of the warlike character of the Jibaros. There seem, however to be less mystical explanations, and the most common causes of fights and wars are probably the following: Violation of social mores, wish for revenge, damage through witchery, traditional rivalry, enmity, and stealing women.³

³ That controversies on account of such factors as listed here usually lead to open fighting and killing is of course due to the lack of an established common law maintained by functional groups (police, judges, wardens), as the Swedish philosophers Hagerstrom and Olivecrona have pointed out. An experiment was made among the Yurupaza Jibaros in collaboration with Father Juan Ghinassi and with the consent of the Indians themselves. A jail was built at Father Juan's courtyard, and the Indians agreed to bring there all delinquents whom they unanimously regarded guilty, instead of letting the involved parties fight it out as they had done before. (As a matter of fact the majority of the Indians usually have a clear idea about who is the guilty according to the mores.) This turned out to be a working solution. The Indians considered the mere *act* of confinement as such to be a sufficiently severe penalty (the lack of liberty



MAP II
THE RESEARCH FIELD.
The Roman figures indicate the situation of the family-houses.

TABLE I
TOTAL POPULATION IN THE THREE GEOGRAPHICAL GROUPS

Family number	Adults (Initiated)				Children (Not initiated)			Total male	Total female	Total number
	Men		Women		Boys		Girls			
	Married	Unmarried	Married	Unmarried	Unmarried	Married	Unmarried			
Pataca										
I	4	0	11	3	9	1	7	13	22	35
II	4	1	9	1	4	3	5	9	18	27
III	3	0	7	0	7	0	6	10	13	23
IV	5	0	18	2	6	2	9	11	31	42
V	3	0	8	0	5	1	3	8	12	20
VI	3	0	5	1	2	2	2	5	10	15
Total	22	1	58	7	33	9	32	55	107	162
Yurupaza										
I	5	1	14	2	10	0	12	16	28	44
II	4	0	55	0	4	2	3	8	10	18
III	3	0	8	1	4	0	5	7	14	21
IV	3	0	77	0	5	1	7	8	15	23
V	5	1	12	2	12	2	10	18	26	44
Total	20	2	46	5	35	5	37	57	93	150
Yaupi										
I	5	0	9	0	14	3	15	19	27	46
II	4	0	11	1	13	0	14	17	26	43
III	3	1	8	0	11	0	9	15	17	32
IV	3	0	4	0	6	1	7	9	12	21
V	4	0	11	1	6	1	8	10	21	31
VI	4	0	7	0	4	2	5	8	14	22
Total	23	1	50	2	54	7	58	78	117	195
Total	65	4	154	14	122	21	127	190	317	507

is the greatest misfortune and shame that can occur to a Jibaro Indian), and the time of confinement was of no importance to them. The common "sentence" was one or two days. All attempts to give Father Juan also judicial power were, however, in vain. The Indians correctly pointed out, that in spite of the fact that he had lived among them for the last twenty years, he didn't know as much as themselves about the mores and traditions of the society. During the subsequent seven months seventeen Indians were sentenced to imprisonment, and Father Juan's last report says that the rate of fighting and killing has decreased considerably. None of the Indians had insisted on long prison terms, but some of them suggested that Father Juan should insult the prisoners several times a day as an additional penalty. All the "plaintiffs" declared themselves to be content with the arrangement of imprisonment as a penalty.

It should, however, be noticed that there is a difference in practice concerning the killing within the same geographical group and between different geographical groups. In the first case, *jus talionis* is strictly followed. The same number from the enemy family is killed that was lost by the offended family. In the second case, namely, conflicts between different geographical groups, a complete war of extermination is carried out.

Indirect communication is very limited, consisting only of some few standardized messages circulated by the signal-drum to overcome distance in space, and of some orally preserved traditions to overcome distance in time.

Beliefs in spirits, both benevolent and evil ones, are common and some of these spirits are supposed to be located in plants and animals and are in these forms objects of worship.

III

The present study is of the "atomic" type.⁴ Each individual is regarded as a unit integrated in a system, in the same way as the atoms form certain patterns in the so-called material world. The interaction between these units is in our case described in terms of attraction and repulsion.

The field-work was made easy by the fact that the Jibaros are extremely aware of and outspoken about their relations to each other. The continuous wars and fights have sharpened their feelings of friendship and hostility. As an example of this can be mentioned the not uncommon habit of the family head of beginning the day with a loud and fierce recitation of the names of enemies, so that the family members may not forget them. Repulsions, which sometimes have been difficult to record in our civilized societies, turned out to be even easier to get than the attractions.

1. Procedure

From the total population (see Table I) in the area studied (see Map II) *all male adults were interviewed*. (Adults are all who have passed the initiation rites.) Each one was asked separately by the interpreter whom he regarded as a friend and whom he regarded as an enemy, the

⁴ The point of departure is to be found in the works of J. L. Moreno and George A. Lundberg, as presented in such publications as for instance: J. L. Moreno: *Who Shall Survive?* Beacon House, N. Y., 1934; and "Sociometry in Relation to Other Social Sciences", *SOCIOMETRY*, Vol. I, 1937; Lundberg: *Foundations of Sociology*, McMillan, 1939. "Social Attraction Patterns in a Village", *SOCIOMETRY*, no. 3-4, 1938, and "The Growth of the Social Sciences", *The American Journal of Sociology*, no. 6, 1945.

same Jibaro words always being used, *winya pingera* (friend, good people) and *winya tuna* (enemy, bad people). The interviews were repeated a second time. Only in 6% of the cases was there variation in the replies. Those cases were more thoroughly questioned and the results so secured were accepted.

2. Interaction and Cohesion

In Table II we find an *index of interaction for all the three geographical groups taken separately*. The following formula was used:

$$\frac{\text{total choices made} \times 100}{N^2 - N}$$

TABLE II
INTERACTION FOR EACH GEOGRAPHICAL GROUP

Geographical group	Possible choices	Made choices	Percentage
Patuca	462	348	75.32%
Yurupaza	380	312	79.61%
Yaupi	506	190	37.54%

The low figure for the Yaupi group is explained by the fact that it is broken up into two parts (see Charts VI and VII), each one with an interaction index over 75% (families I-III: 76.20% and families IV-VI: 78.33%). Compared with the Vermont study⁵ interaction within each geographical group is very high. In the Vermont study interaction was never higher than 56%, and in the studies made in our civilized societies the figure is usually below 30%.

The cohesion within each group is shown in Table III. It is strikingly high. In all the geographical groups some few individuals have a central position chosen by the majority. Few or no choices are made by individuals from outside their own geographical group and few choices go to outsiders. *The centripetal tendency is pronounced*. The cohesion is computed by the following formula:

$$\frac{\frac{Ca+Ci}{I}}{\frac{Co}{0}} + \frac{0(Ca+Ci)}{ICo}$$

⁵ Lundberg, George A.: "Attraction Patterns in a Village", *SOCIOMETRY*, no. 3-4, 1938.

where the letters indicate:

- I = Number of individuals in in-group
 O = Number of individuals in out-group who receive choices from the in-group
 Ci = Number of choices coming in
 Co = Number of choices going out
 Ca = Number of choices among the members of the in-group

TABLE III
 COHESION WITHIN EACH GEOGRAPHICAL GROUP

Group	Choices per capita per members of in-group
Patuca	21.00
Yurupaza	9.50
Yaupi	10.66

This centripetal tendency is *graphically* demonstrated in the Charts II, IV and VI. If we for instance take Chart VI, the I (the number of individuals in the in-group) is 3 (I1a, VI6D, and V123D), O = 16,* Ci = 26, Co = 16, and Ca = 6. The result according to the formula:

$$\frac{16(6+26)}{3 \times 16} = \frac{512}{48} = 10.67$$

3. Dominant Groupings

In Charts II-VII some dominant groupings are shown. For the sake of lucidity the relations between *all* the marginal individuals are not shown. Only for the central constellations with which we are primarily concerned is the complete web of in- and out-going choices charted.⁶

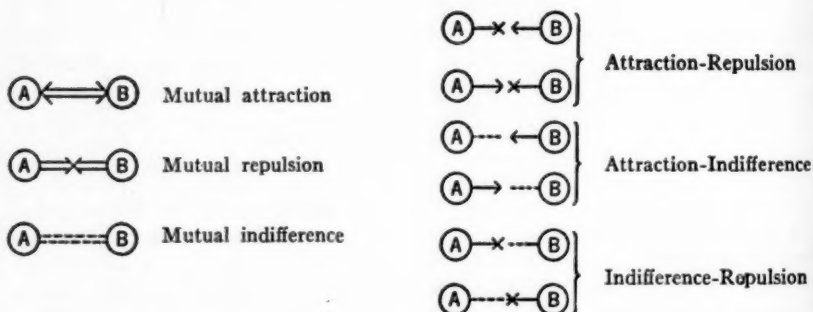
* Not indicated on the graph.

⁶ Each Arabic figure refers to one person. The Roman figures indicate membership of family house, and the capital letters indicate relationship by birth. The number of the circles for each individual indicates the age, one for each generation of descendants that he has lived (as the Jibaros have no system for computing the age comparable to our). Attraction and repulsion are indicated in the following way: after George A. Lundberg: *Foundations of Sociology*, McMillan, 1939, page 352, which follows closely Moreno's original instructions in *Who Shall Survive?*, p. 114-16, Beacon House, 1934.

In *Chart II, the attraction pattern, Patuca*, the central figure VI20E, chosen by everybody, is a *ceremony man*. Priests in the proper sense of the word do not exist among the Jibaros, but there is always a special performer of the rites during the important feasts, the victory feast, the tobacco feast, etc. The term *whuea* is used for the ceremony man which means "old man". As indicated in the chart (three circles) VI20E is also the oldest one in this geographical group, having lived three generations.

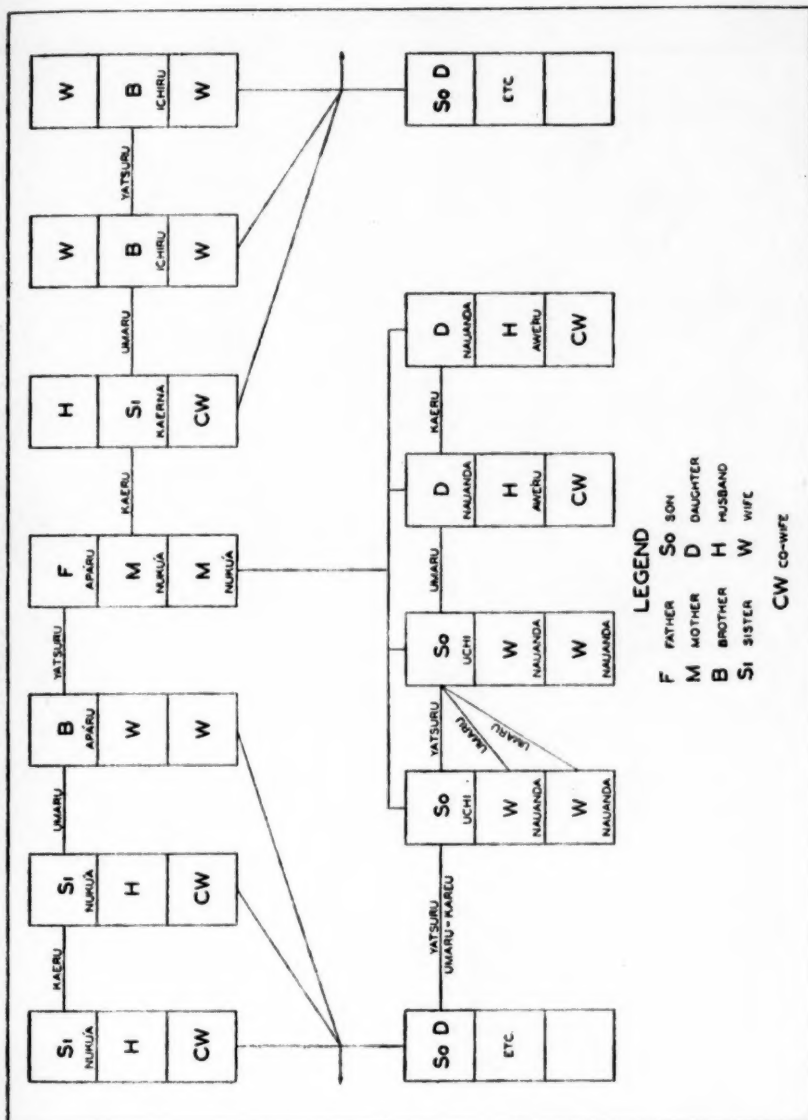
In *Chart III, the repulsion pattern, Patuca*, the individual V17D, has an equally central position. He is a sorcerer, with which word is meant a person trained in the magic arts, possessing the power of harming and curing people.⁷ The great strength that he possesses is indicated by the fact that although he is repelled by all the individuals 1-16, he is in his turn indifferent. He regards them as inferior and harmless, as they do not have his knowledge of the magic arts.

In *Chart IV, the attraction pattern, Yurupaza*, the individual IV15C, is the *chief in war*, and II9C the *ceremony man*. At the time of the study a war is being waged against the Yaupis and IV15C, who is the most experienced one, has been appointed. In *Chart V, the repulsion pattern, Yurupaza*, a typical *conflict situation*, due to violation of traditional rights, is depicted. The family groups I and V are enemies of the two brothers III,10D and III,11D, and the hostility is mutual. The reason seemed to be a quarrel over the fishing rights in the river. (As can be seen on Map II family house III is situated between family houses I and V along the river). The difference between this repulsion pattern and that on Chart III, where the cause is sorcery, should be noticed. In Chart III the relations are repulsion-indifference, in Chart V repulsion-repulsion.

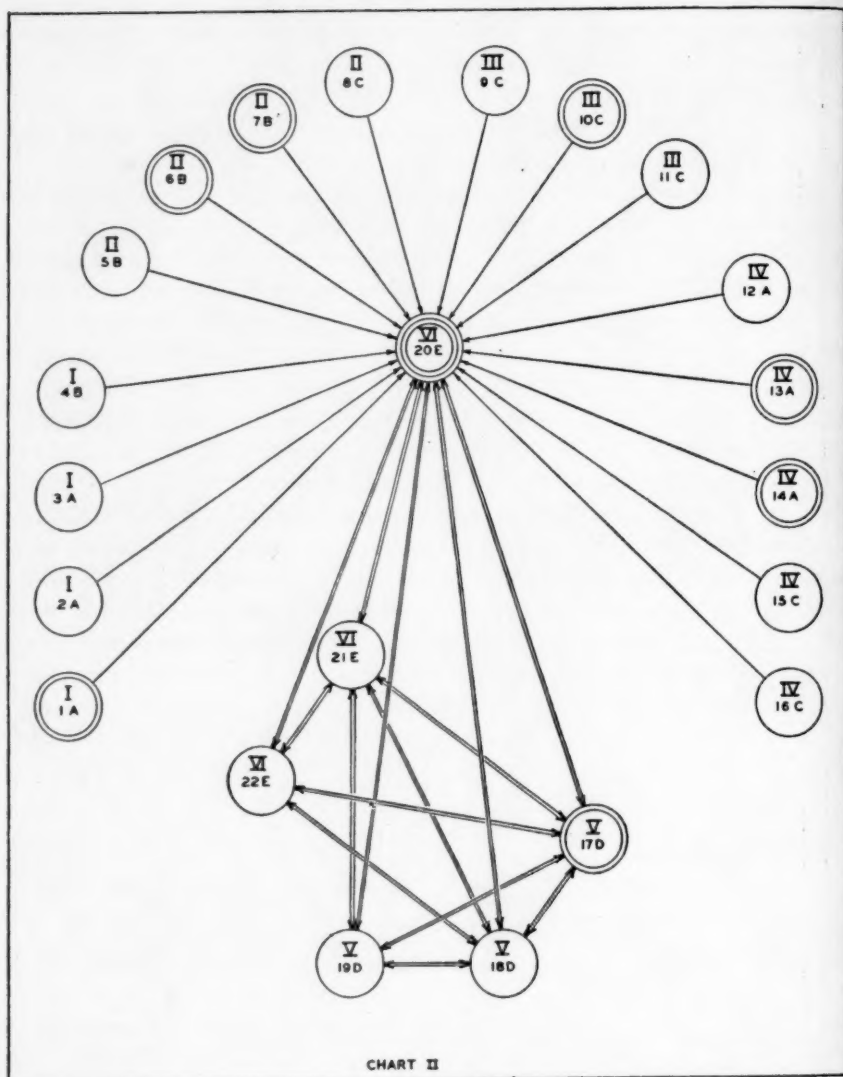


⁷ The sorcerer is not always a professional man. The term medicine-man is generally used for a professional sorcerer.

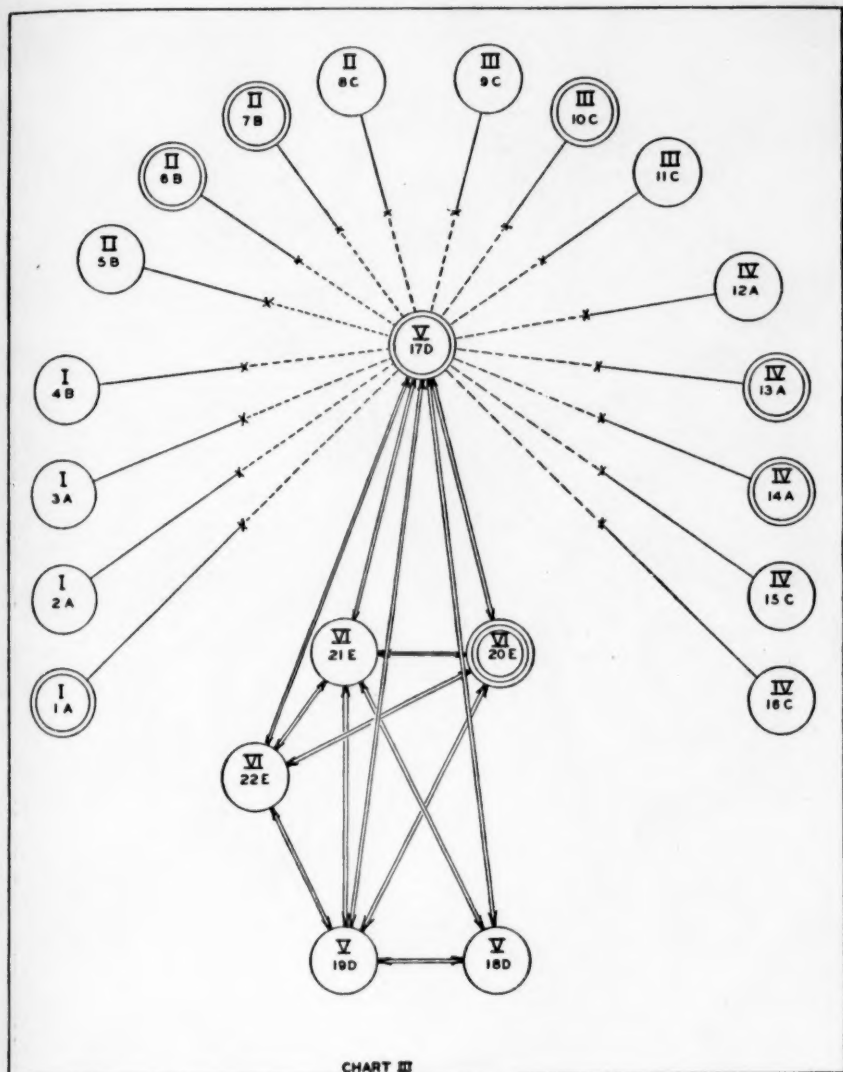
HOW THE JIBAROS DESIGNATE RELATIONSHIP



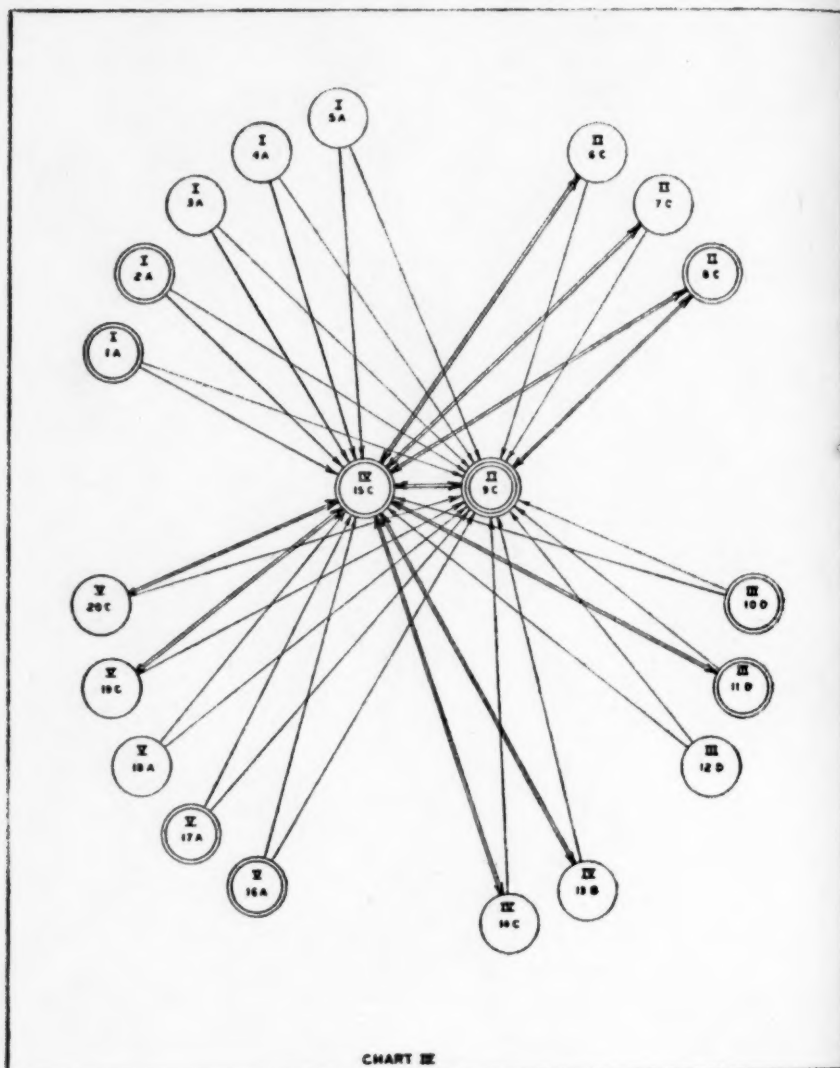
ATTRACTIONS. PATUCA.



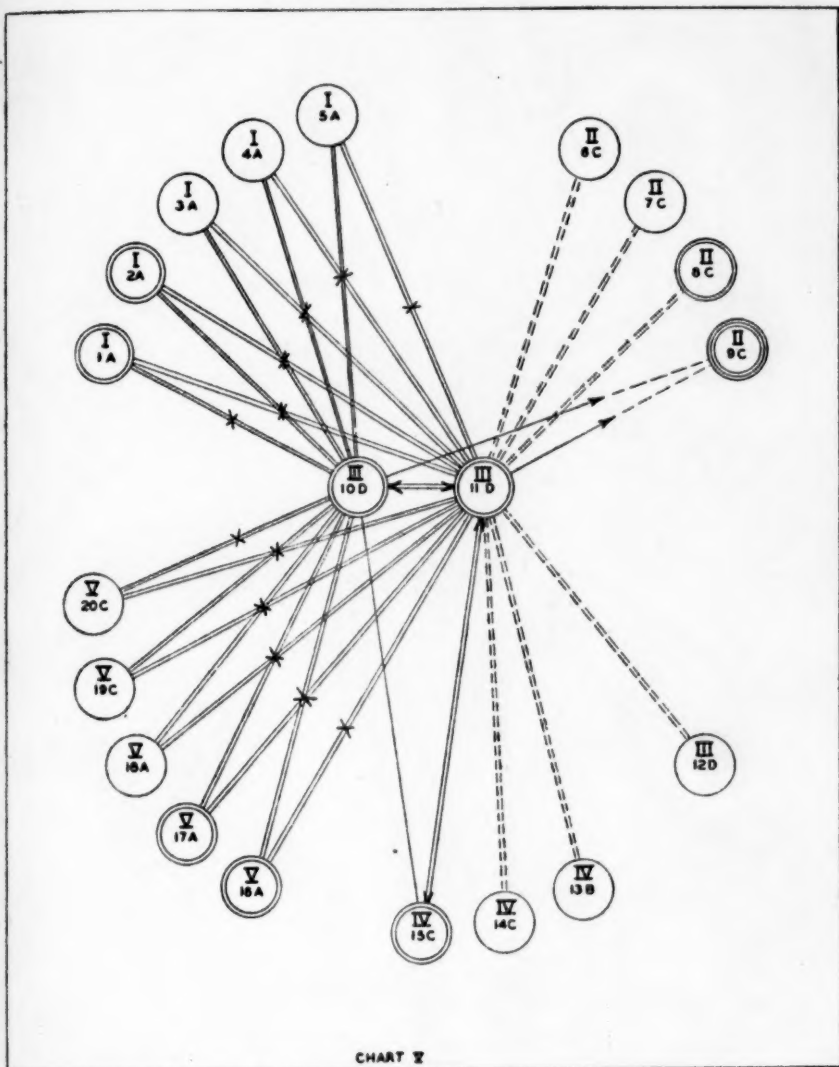
REPULSIONS. PATUCA.



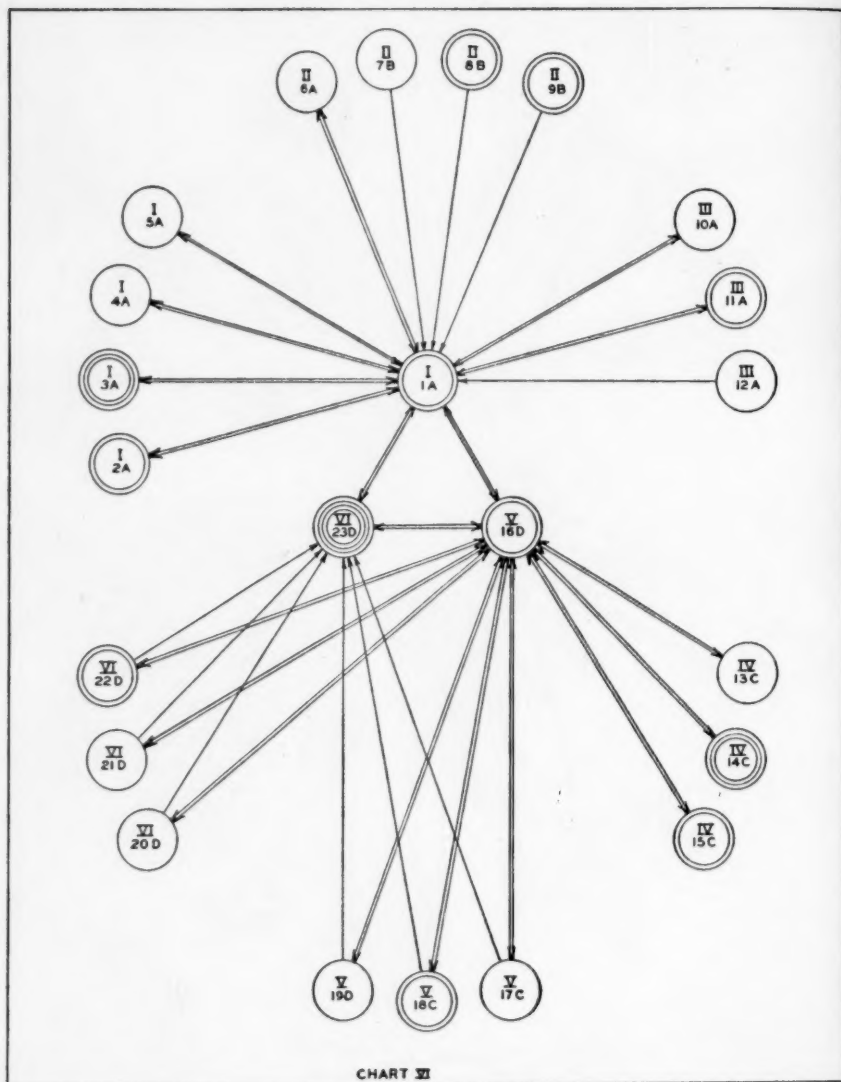
ATTRACTIONS. YURUPUZA



REPULSIONS. YURUPUZA



ATTRACTIONS. YAUPI



REPULSIONS. YAUPÍ

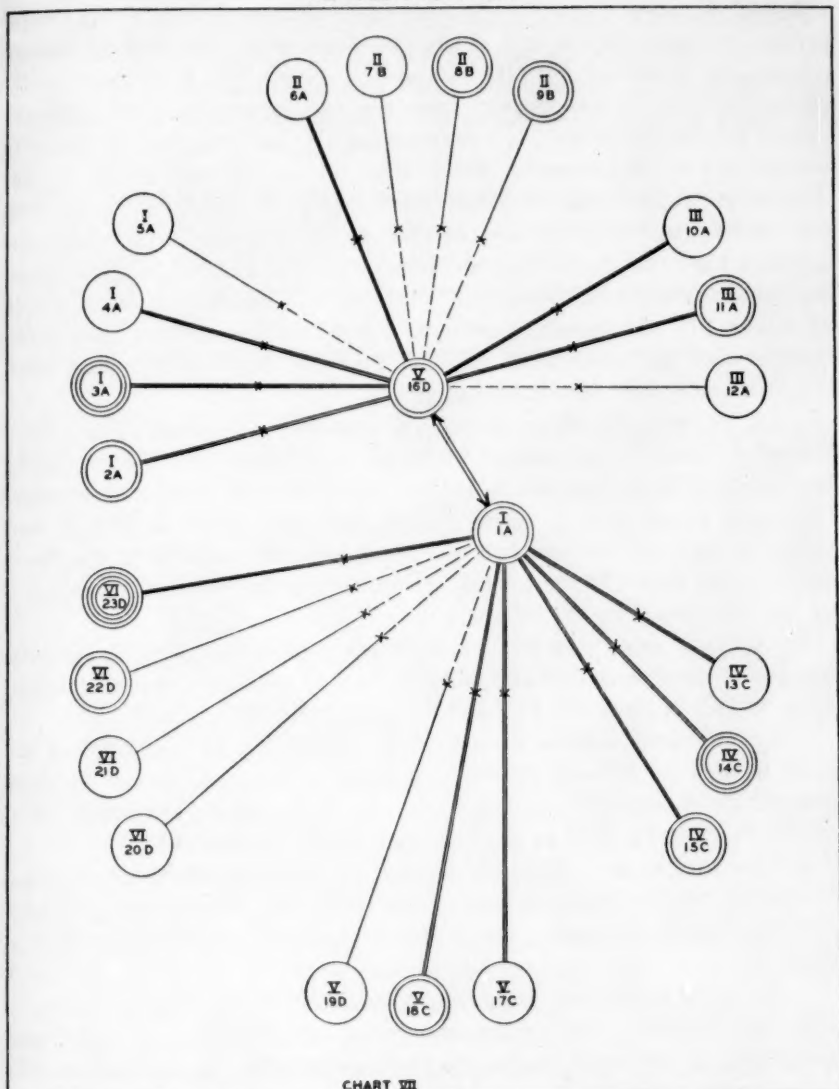


CHART VII

In *Chart VI, the attraction pattern, Yaupi*, the cleavage into two groups is very apparent and corresponding to the geographical locations. Individuals 2-12 all chose *I1A*, and individuals 13-22 all chose *VI6D*. Those central persons are both *chiefs in war*. They chose each other, thus uniting the two groups, and individual *VI23D*, the *ceremony man*. The latter is evidently chosen because of the support from the two key-persons, who are the "power behind the throne." (A separate inquiry indicated that the majority wanted *IV14C* as *ceremony man*.) The reason why two chiefs in war were appointed, was that the Yaupis were waging two wars at the same time, one against the Yurupazas and another against a group further down the Santiago river (not included in the present study). *I1A* was a specialist on war against the former group and *VI6D* on war against the latter group. In *Chart VII, the repulsion pattern, Yaupi*, the key-persons have interchanged their positions, which indicates that they both are practising black magic towards their respective out-groups.

Let us now ask: What theoretical significance do these charts have, if any? I think the best answer would be: They seem to offer a possibility of *operational definitions* of conceptions for a long time dealt with in vague conceptual terms only. It seems obvious that such words as chief in war, ceremony man, and sorcerer can be defined from the positions in the charts (or from the figures in the tables). Definitions of the proposed types would be the following ones for instance:

1. *Chief in war* = an individual receiving more than 50% of the total number of possible choices and being at least of an age of two generations. (E.g. *IV15C* in chart IV, *I1A* and *VI6D* in chart VI).

2. *Ceremony man* = an individual, receiving more than 50% of the total number of possible choices and being at least of an age of three generations or regarded as being among the 25% oldest individuals. (E.g. *VI20E* in chart II, *II9C* in chart IV and *VI23D* in chart VI.)

3. *Sorcerer* = an individual, exposed to more than 50% of the total number of possible repulsion choices and in his turn demonstrating at least 25% indifferent responses. (E.g. *VI7D* in chart III and *I1A* and *VI6D* in chart VII.)

We are of course here only trying to point out the possibility of a special type of definitions. The figures and percentages indicated as suggestions correspond to the conditions in the three geographical groups studied, but if used more generally, they have naturally to be changed and refined by further research.

4. *Other Relationships*

The limitation of the study to the verbally expressed attractions and repulsions of the male adults in the area indicated, was deliberately chosen as it made it possible to cover the greatest number of geographical groups in the time at my disposal. This limitation, however, immediately raises some questions about the relation of the chosen group to other groups and to other factors, as for instance:

- a) What is the correlation between verbal and nonverbal behavior?
- b) What is the correlation between (a) attraction-and-repulsion-patterns and (b) patterns of other kinds?
- c) What is the correlation between the answers of the men and the women?
- d) What is the correlation between repulsions and geographical space?

TABLE IV
TOTAL NUMBER OF VISITS OF TRIBE MEMBERS DURING TWO WEEKS IN PATUCA

Family paying the visit		Family receiving the visit					
		I	II	III	IV	V	VI
I	Men	x	14	19	22	0	23
	Women	x	27	12	38	0	58
II	Men	17	x	14	23	0	27
	Women	5	x	24	39	0	31
III	Men	12	17	x	14	0	21
	Women	19	21	x	18	0	23
IV	Men	21	18	27	x	0	26
	Women	52	37	41	x	0	58
V	Men	0	0	0	0	x	31
	Women	0	0	0	2	x	28
VI	Men	7	5	2	8	17	x
	Women	12	8	9	3	19	x

The unit is one individual visit.

The reliability of the verbal expressions as an index for non-verbal behaviors has of course to be checked separately in each case. This was done among the Patucas. The result is shown by a comparison between Table V, where *all visits during two weeks* are listed, and Table VII where the oral testimonials from the same group are listed. The overlapping is almost complete. The houses of which the members are indicated as enemies are *not* visited. Table IV gives at the same time a good *measure of the degree of friendship*. Family VI for instance of which the member VI20E

has a central position in the attraction pattern on Chart II is paid the highest number of visits.⁸

In our so-called civilized societies the correlations between the attraction-and-repulsion-patterns and the more formal patterns, such as familial relationships, economic status, occupation, club membership, etc., have to be taken into consideration. In the Jibaro society there are no formal patterns except the familial pattern. How the Jibaros designate familial relationship is shown on Chart I. The Jibaro family is patripotestal. The children use, for instance, the same word, *aparu*, for their biological father as well as for their paternal uncles. No parallel exists to this on the mother's side. The parents use the same word, *nauanda*, both for the daughters and the daughters-in-law. For the son-in-law, however, another term, *aweru*, is used than for the son, *uchi*. A marriage between cousins on the father's side or between a paternal uncle and his niece is regarded as incest, but on the mother's side marriages of these types are regarded as natural.

As could be expected the blood relationship is highly correlated with attraction.⁹ Table V shows the interaction within each family house, in all the three geographical groups, computed after the same formula used on page eleven:

$$\frac{\text{total choices made} \times 100}{N^2 - N}$$

TABLE V
INTERACTION WITHIN EACH FAMILY HOUSE

Patuca family no.	Percentage	Yurupaza family no.	Percentage	Yaupi family no.	Percentage
I	100.00%	I	100.00%	I	100.00%
II	66.66%	II	100.00%	II	92.22%
III	100.00%	III	100.00%	III	100.00%
IV	100.00%	IV	33.33%	IV	100.00%
V	100.00%	V	100.00%	V	100.00%
VI	100.00%			VI	100.00%

In all the groups not showing a 100% interaction (Patuca II, Yurupaza IV, Yaupi II) the reason seemed to be a recent incorporation into the family group of a son-in-law (among the Jibaros the son-in-law frequently

⁸ See, Charles B. Loomis: "Sociometrics and the Study of New Rural Communities", SOCIOMETRY, Vol. II, 1939.

⁹ Irwin T. Sanders: "Sociometric Work with a Bulgarian Woodcutting Group", SOCIOMETRY, Vol. II, 1939.

moves over to the house of the father-in-law). In these cases (II8C among B-members in Patuca II, IV13B among C-members in Yurupaza IV, and 116A among B-members in Yaupi II) (see Charts II, IV and VI) the arrival of the new-comer is resented by some of the old members of the family house.

Table VI shows the *interaction between all persons related by birth*, computed by the same formula as in the last case.

TABLE VI
INTERACTION BETWEEN PERSONS RELATED BY BIRTH

Patuca relationship	Percentage	Yurupaza relationship	Percentage	Yaupi relationship	Percentage
A	100.00%	A	92.88%	A	93.05%
B	100.00%	B	100.00%	B	100.00%
C	90.00%	C	85.71%	C	90.50%
D	100.00%	D	100.00%	D	83.33%
E	100.00%				

The figures seem to be somewhat lower than in the previous case, but any definite conclusions are of course impossible to draw from such limited material. (It should be noted that the letters repeated for each geographical group have no reference to one another. Thus the members from the A-group in Patuca are *not* related to the members of the A-groups in Yurupaza or Yaupi).

The *overlapping of the answers of the male and female adults* was studied in one geographical group, the Patucas. The result is shown in Table VII. As seen, the correspondence is almost perfect. Whether this holds true for all the geographical groups, and whether the women to women patterns correspond with those for men, only further research can demonstrate. It seems, however, likely that the men's opinion in the present matter to a large extent determine the women's also in other groups. This is supposed not because of a complete submission of the women—which is far from true—but because of the strict division of labor and interests between the sexes. Formation of alliances and actions against enemies are part of the "politics" and as such belong exclusively to the masculine sphere.

Eventually an attempt was made to determine the *relation between repulsions and geographical space*. As already has been pointed out (Part I, pp. 6-7), great hostility exists between the different geographical groups. In order to ascertain the degree of hostility all male individuals of the three previous groups (Patuca, Yurupaza, Yaupi) and of another Jibaro group, otherwise not dealt with in this study, the Huambizas, living farther down the Santiago River, were interviewed about their feelings toward the

TABLE VII
CORRESPONDENCE BETWEEN MALE AND FEMALE VERBAL RESPONSES IN PATUCA

Expressed by family	Expressed towards family											
	I			II			III			IV		
	Friendship	Hostility	Indifference	Friendship	Hostility	Indifference	Friendship	Hostility	Indifference	Friendship	Hostility	Indifference
I 4 men	x	x	x	4	0	0	4	0	0	4	0	0
14 women	x	x	x	14	0	0	14	0	0	0	14	0
II 5 men	5	0	0	x	x	x	5	0	0	5	0	0
10 women	10	0	0	x	x	x	10	0	0	0	10	0
III 3 men	3	0	0	3	0	0	x	x	x	3	0	0
7 women	7	0	0	7	0	0	x	x	x	7	0	0
IV 5 men	5	0	0	5	0	0	5	0	0	x	x	x
20 women	20	0	0	20	0	0	20	0	0	x	x	x
V 3 men	0	2	1	0	2	1	0	2	1	x	x	x
8 women	0	8	0	0	8	0	0	8	0	x	x	x
VI 3 men	2	0	1	2	0	1	2	0	1	3	0	0
6 women	6	0	0	6	0	0	6	0	0	6	0	0

The unit is one individual response.

Editorial note: Observe how this matrix (Table VII) of interfamily choices by sexes presents more rigorously the finding of hostility to the sorcerer shown in Chart III. Chart III isolates the interperson hostility; Table VII shows the resulting interfamily hostility and shows its extreme degree relative to all hostile interrelations among all the families.

TABLE VIII
FEELINGS OF HOSTILITY AND FRIENDSHIP BETWEEN THE DIFFERENT GEOGRAPHICAL GROUPS

Feelings of the male individual from		toward the groups of							
		Patuca		Yurupaza		Yaupi		Huambiza	
		one or all are enemies I	more are friends II	I	II	I	II	I	II
Patuca (23)		x	x	19	4	21	2	23	0
		x	x	82.6%	17.4%	91.3%	8.7%	100%	0%
Yurupaza (22)		18	4	x	x	20	2	22	0
		81.81%	18.19%	x	x	90.9%	9.1%	100%	0%
Yaupi (24)		20	4	22	2	x	x	23	1
		83.33%	16.67%	91.66%	8.34%	x	x	95.83%	4.17%
Huambiza (31*)		31	0	31	0	31	0	x	x
		100%	0%	100%	0%	100%	0%	x	x

* The actual number during our short stay. A party was out shooting.

members of their respective out-groups. The number and percentage of individuals in each group answering that *all the members* of the other geographical groups were enemies are indicated in Table VIII, column I. The figures for those who answered that one or more individuals from the other groups were friends are given in column II in the same table.

As could be suspected there is a positive correlation between the degree of hostility and the geographical space. It seems likely that a correlation as indicated in Table IX could be found in the whole Jibaro country.

TABLE IX
CORRELATION BETWEEN HOSTILITY AND GEOGRAPHICAL SPACE

Geographical groups	Approximative distance	Hostility in percentage (as in Table VIII)
Yurupaza-Huambiza	50 miles	100%
Huambiza-Yurupaza	50 miles	100%
Patuca-Huambiza	40 miles	100%
Huambiza-Patuca	40 miles	100%
Huambiza-Yaupi	30 miles	100%
Yaupi-Huambiza	30 miles	95.83%
Yaupi-Yurupaza	25 miles	91.66%
Patuca-Yaupi	25 miles	91.3%
Yurupaza-Yaupi	25 miles	90.90%
Yaupi-Patuca	25 miles	83.33%
Patuca-Yurupaza	15 miles	82.60%
Yurupaza-Patuca	15 miles	81.81%

IV

In spite of the very limited area from which the material pertaining to the present study is gathered, some suggestions and hints seem to present themselves concerning at least the following problems of more universal scope:

1. The laws for different types of groupings, centripetal, centrifugal, etc.
2. The operational definition of "key persons".
3. The correlation between verbal and non-verbal behavior.
4. The correlation between attraction and blood relationship.
5. The relation between repulsion and geographical space.

These problems can of course be solved only by inventing hypotheses and having them tested out through further research.

What we mainly have wished to call attention to in this paper is, however, that in this principal task of sociology it seems apparent that excellent opportunities for gathering basic material and for testing new hypotheses in many cases may be offered by studies among so-called primitive peoples.

SOCIOMETRY AND MARXISM*

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SOCIOMETRY AND THE EXPERIMENTAL METHOD IN SCIENCE

The experimental method in science, widely respected by scientists as their canon, has been given its authoritative formulation by John Stuart Mill (9). Mill's *System of Logic* was published about a century ago (1843). An intimate connection exists between Mill's work and the work of Auguste Comte. Mill admits that his own system of logic owes many valuable thoughts to Comte (5, 8). (Under the influence of Comte, Mill replaced among other things the *à priori* method in science by the *à posteriori* method.) My critique of Mill's canon of experimental method is therefore also directed toward Comte.

The model of how the findings of the social sciences should be validated were taken by Mill from the physical sciences. He came to the exasperating conclusion (9) that the experimental method cannot be applied to the social sciences, their subject matter being too complex. The question raised here is whether he did not start with a false premise, whether the model he held authoritatively before the social sciences was not the wrong one. In the generation when the two theorists, Comte and Mill, constructed their universal systems of experimental method Karl Marx was busy building his own. His system had a different slant. He was a theorist and a thinker of practice. He, their antagonist, pushed in the "Theses on Feuerbach" (1845) and in the "Communist Manifesto" (1848) into an opposite direction. One who is versed in sociometric methods could venture to say that he was unconsciously following a model of experimental method more indigenous to the social sciences, a model of social actors in a world of action. But there is no trace to be found of the Marxist kind of logic in the system of logic of Mill. It should not be implied here that Marx was interested in experimental method *per se*. He was not interested in the type of precision and validation for which the experimental method stands. But he was interested in sig-

*A part of this paper was published by the University of Pittsburgh Press, Pittsburgh, Pennsylvania, under the title "Experimental Sociometry and the Experimental Method in Science", in *Current Trends in Social Psychology*, 1948, and appeared in French in the *Cahiers Internationaux de Sociologie* 1949, published by the Presses Universitaires de France, Paris, under the title "Methode Experimentale, Sociometrie et Marxisme".

nificant methods which work in practice and are borne out by "experiments of nature".

The experimental method should therefore discern two parts, a *material* part and a *logical* part. Mill's canon deals exclusively with the logical part, or as he calls them, the *methods of experimental inquiry*. They were designed to be methods of discovering causal connections and methods of conclusive proof. He differentiated between the method of agreement, the method of difference, the joint method of agreement and difference, the method of concomitant variation and the method of residues. It is due to the apparently invincible pathos of the logical exposé of the experimental methods that they have become sacred to all worshipers of science. They rest on the dogma of the uniformity of nature or, in Mill's own words, "There are such things in nature as parallel cases, that what happens once, will, under a sufficient degree of similarity of circumstances, happen again." The uniformity of nature, he says, is the "ultimate major premise of all inductions."

There is reasonable doubt as to the absoluteness of general laws (17). The belief in general and uniform laws is the *credo* of "scientism." In the last analysis there are "lovers" of the idea of science, just as others are lovers of the idea of God. Whether true or false, without such a *credo*, science (at least as it is generally understood) would become meaningless. The construction of a higher domain of inquiry, of a "superscience" which may be neither metaphysics nor religion, is a postulate of our critical faculties. Such an inquiry would have the task to explore the logical limits of science and should not reduce its authority; for the chief attribute of science should be that it is always ready to study itself and to disagree with itself.

REVISED FOUNDATIONS OF THE EXPERIMENTAL METHOD; THE MATERIAL AND THE LOGICAL PART

The hypothesis that nature is uniform, that the universe is ruled by general laws and that the same cause under the same circumstances will be accompanied by the same effect is not the subject of this paper. Its subject is a critique of the experimental methods because of the negligence of the *material* aspects of the situations to which they are applied. Whereas the logical aspects of experimentation have been stressed abundantly, from Francis Bacon (1) to Mill and up to our own time, the material part has been so sadly neglected that the development of the social sciences has been seriously crippled and with it the possibility of providing the total of human society with more rigorous and adequate instruments of social change than are available. It has become, therefore, an important task of the sociological

thought of our own century to correct the most flagrant error of methodical insight which has made social research trivial and confusing while deteriorating its outlook.

The *experimental situation* in its broadest meaning consists of three phases: (a) the material part, that is, the matter for whose study an experiment is designed; (b) the logical part, that is, the methods constructed in order to test the validity of a hypothesis or of a universal law; and (c) the relationship between the material of the experiment and the logico-experimental part of the procedure. In the physical sciences and, to a degree, in the biological sciences the material target of the experimental method does not matter so much as in the social sciences. There are, of course, vast differences to be found in material structure: the difference between a star, a plant, a stone, and a plant; or the difference between a solid, a liquid, and a gas; the difference between an algae, a leaf of grass, and a tree; or the difference between a fish, a butterfly, and a rat. But however vast the difference in material structure between these phenomena of nature, by and large the same experimental method can be applied and adjusted to them. Because of the value which the experimental method has shown in these areas the conclusion has been drawn by many writers that it can be applied to the social sciences. But their optimism is unjustified. Mill's skepticism was correct in principle; but he did not realize that it was the experimental method which was at fault, and not the inaccessibility and fleeting inconsistency of social phenomena.

SOCIOMETRY: TERM, DEFINITION, AND MEANING

The chief methodological task of sociometry has been the revision of the experimental method so that it can be applied effectively to social phenomena. Sociometry has been defined as "the mathematical study of psychological properties of populations; the experimental technique of and the results obtained by application of quantitative methods"; also as "the inquiry into the evolution and organization of groups and the position of individuals within them" (12). As the "science of group organization" (11) "it attacks the problem not from the outer structure of the group, the group surface, but from the inner structure." The definition of sociometry was thus in accordance with its etymology, from the Latin, but the emphasis was laid not only on the second half of the term, i.e., on "metrum" meaning measure, but also on the first half of the term (i.e., on "socius" meaning companion). Both principles had been neglected, but the "socius" aspect had been omitted from the deeper analysis far more than the "metrum" aspect. The phrase

sociometry has a linguistic relatedness in construction to other, traditional scientific terms: biology, biometry; psychology, psychometry; sociology, sociometry. From the point of view of systematics it is preparatory to the topical fields, sociology, anthropology, social psychology, social psychiatry, etc. It is concerned with the "socius" and "metric" problems common to *all* social fields. Sociometry as a science is an ideal; in its broadest outlook it engulfs but is not identical with any particular trend. Since its conscious inception it has developed three departments of research: (a) dynamic, or revolutionary sociometry (representatives are J. L. Moreno, H. Jennings, and, to a degree, K. Lewin); (b) diagnostic sociometry (J. Criswell, G. Lundberg, U. Bronfenbrenner, M. Northway, M. Bonney, L. Zeleny, C. Loomis, F. Chapin, E. Bogardus, etc.); and (c) mathematical sociometry (P. Lazarsfeld, S. Dodd, L. Katz, J. Stewart). The three divisions overlap, and some workers (like the writer) have made contributions to each department.

Every science refers to a constellation of facts and the means of their measurement. Without adequate means of how to discover the facts and without adequate means of measurement a science does not exist. The preliminary step in the development of every science is to realize the conditions under which the significant facts emerge. How to accomplish this differs from science to science. How to realize the conditions under which physical and biological facts emerge (their description, careful observation, and study) is comparatively well known. The problem of creating the conditions under which the significant facts of human relations emerge is far more complicated. It requires nothing short of a revolutionary method. The reasons why there should be such a great difference between the preliminaries required for the social sciences as compared with the physical sciences is not immediately obvious. In the physical sciences, since the subject is inanimate, most of the emphasis has been placed upon the mechanical, physical aspects of the situation. We do not expect the subjects, stone, water, fire, earth or planets, suns and stars to contribute anything themselves to the study of their own selves; except in the mythologies, we do not ascribe to them any soul or personality, or at least we do not do it anymore. Therefore, the metaphysical relations which might exist between the planets and stars, to each other, as mythological soul-bearing actors, do not concern the science of physics. This problem does not change much when it comes to infrahuman organisms, e.g., in experiments with rats, guinea pigs, and the like. The social investigator, the one who sets up the experiment and interprets the data, is a human being and not a guinea pig or a rat. The

rats or guinea pigs, so to speak, have no part in such experiments as actors in their own behalf. All such experimental designs are human designs and not designs of guinea pigs or rats. If a poetic mind à la Swift could describe how rats feel about each other and what the experiments which men make on them mean to them, it would probably be within our artistic comprehension but outside of our scientific comprehension. One could say here that we are trying to measure the behavior of rats as it "is" and not what rats feel it is, but this does not change the methodical difficulty which we encounter when we apply the same techniques of observation to the relationships of men among themselves. With animal societies one can take the stand that they are given and preordained just like the individual animal organisms are, but human society is not automatically given and preordained. Although deeply related to physical and biological conditions, it has a structure whose creation and development is initiated and can be studied from within.

THE MATERIAL ASPECT OF THE PSYCHOLOGICAL SITUATION

Now that the conflict between the material and the logical part of an experiment is nearing clarification, we may say that it was already noticeable throughout the last century in the development of the psychological analysis of personality—which we call in short the psychological situation. Let us consider here one of the chief ideas of this period, the notion of association of ideas. Wundt took over the notion from Locke—that ideas which belong together tend to stay together in the psyche. Freud was the first to revise it, not so much as to what associations logically are, but as to how associations can be materially produced for scientific purposes. For Wundt the individual was to an extent still a response mechanism which can be studied and measured coldly with a minimum of his participation, approximately as the animals in the maze. The psychological situation, the relation of the investigator to his subject matter, was for him as for his predecessors, Weber and Fechner, of an extreme artificiality. But Freud was more concerned with how to get the significant kind of association than how to get *any* associations or responses. Experiments in the logical sense, he felt, although he never made it explicit, must be postponed until more is known about the material structure of the psyche and about how to elicit genuine evidence from an individual. In his judgment, the experimental approach of the 1850's was premature and futile and its results were trivial. Freud already insisted upon the voluntary and spontaneous participation of the individual clients in the act of reporting and analyzing their ideas. His skepticism for the psycho-

logical experiments of the logical schools is due to his intuitive anticipation that the study of human nature is difficult if not impossible without the comprehension of what I have called "the nature of the warming up process." But Freud traveled only half of the way. It took more than a quarter of a century after his first publication (1895) until with the advent of psychodrama (1923) (10) the material part of the psychological situation was fully rescued and a deeper comprehension was reached, and it has taken another twenty-five years for this awareness to impregnate psychological literature. Freud's position underwent a deep revolution with my theory and practice of psychodrama. His notion of the associations to be elicited for scientific analysis, although called "free," was limited to an association of *words* (and, in addition, limited by the interpretation of the analyst). The spontaneity of the individual's body was not included in the operation. The psychological situation in itself was to a degree still artificial, a conversation in a doctor's office between a physician and a patient, which was bound to limit and distort the natural flow of associations. Psychodramatic methods tried to correct this; the contrived psychoanalytic physician-patient relationship was abandoned and the individual returned to the place where he actually lives and acts, back into the natural atmosphere of his existence, to that which situation literally means, *in situ*, the place where he thinks, feels, and acts naturally, spontaneously, and to a degree, creatively. This return to the natural setting would have been a regression if we had not been able consciously to deepen and extend the material part of the psychological situation beyond Freud's achievement. I modeled the experimental situation in such a manner that it could be for the individual a design of living, a miniature of his life situations. The subject was not only asked to speak about himself, to let go verbally, but to act, to live out, to be an actor. The association of words was extended by an association of acts. These chains of words and acts were themselves related to each other and to a concretized life situation; all the verbal ghosts were now materialized as the roles of the people in his psychodrama. The process of association of acts was still further extended into the association of interactions between various individuals. It is perhaps because of this maximal externalization of the full personality that the psychodrama is making the experimental method directly applicable to human personality by means of the psychodramatic test. In many forms of psychodramatic productions, also, the artificiality of the contrived experiment is overcome, the experiment *in situ* and the life setting are one and the same thing. Early types of psychodramatic procedure were experiments *in situ*. The transfer of a psychodrama to a "theater," a laboratory, or a treat-

ment room was a secondary and later development. The natural social process is, of course, not all spontaneity, it produces its own restraints. If the experiment *in situ*, however, is kept in mind as a model, the artificialities of the contrived experiment can be kept at a minimum. Recorders, observers, and analysts are made natural parts of the group process: they are given a function of immediate usefulness for every participant (14).

Because the psychodramatic method is giving full consideration to the nature of the warming up process of human beings it is able to elicit the maximum spontaneity and co-operation of the participating subjects. It is because an advance has been made in bringing to consciousness the material part of the psychological situation that the hope persists that the logical part can and will be applied to it more adequately and with less triviality than in the past.

However complex the material structure of a single individual's life situation is, it is still possible to observe him apart from the rest of the universe. You can talk to him individually and he can talk back to you, but the material structure of the life situation of the *group* is increasingly more complicated. The larger the size of the group the more involved and impenetrable is this material structure. You cannot talk to the group and the group cannot talk back to you. It has no ego. The nature of the warming up process of the group is, if possible, a greater mystery still than that of a single individual, and unless methods are invented by means of which the drama of the group can be mobilized from within and by itself, all efforts at getting to a science of the group may fail more fundamentally than has been the case with the science of the individual.

THE MATERIAL ASPECT OF THE SOCIAL SITUATION

The dynamic logic of social relations is particularly intricate and has remained unconscious with Man because of his maximal proximity and involvement in his own situation. For millennia therefore, the activities of human society perhaps have been a greater mystery to him than every other part of the universe. Because of their greater distance from him he could see the movement of the stars and planets, or the life of the plants and animals, more objectively. Therefore, the science of human society is today hardly as far developed as physics and astronomy were in the minds of Democritos and Ptolemy. It takes enormous sacrifice and discipline to view and accept himself as he is as an individual man, the structure of the individual psyche, its psychodynamics; but the degree of invisibility of the structure of human society, of its sociodynamics, is much greater than that

of the single individual. The effort of becoming objective toward the socius encounters many more obstacles than to be objective toward his own individual mind. The involvement of the ego he can still grasp, perhaps he can pretend to know it because it operates within him. The involvement of the socius, however, he cannot pretend to know as it operates outside of him; but it is an outside to which he is inescapably tied.

Sociometry has taught us to recognize that human society is not a figment of the mind, but a powerful reality ruled by a law and order of its own, quite different from any law or order permeating other parts of the universe. It has therefore invented methods called sociometric, by means of which this area can be adequately defined and explored.

The internal, material structure of the group is only in rare instances visible on the surface of social interaction; and if it is, no one knows for certain that the surface structure is the duplicate of the depth structure. In order, therefore, to produce conditions by means of which the depth structure may become visible—operationally—the “organisms” of the group have to turn into “actors”; they have to emerge presently in behalf of a common goal, a point of reference (criterion), and the “environment” or “field” has to turn into specific, action-filled situations, charged with motivating provocations. As even our most minute observations of the interaction may be incomplete, meaningless, or useless to the actors, we must get our actors to act as they would when engaged in actual living. Indeed, we must enter the movement of social living itself and aid them on the spot and in action to increase their flexibility and productivity, to extend their range of reality perception beyond its present orbit. The only productive way to make them reveal their true selves to each other—in reference to a vital criterion—is to find methods by which they can be induced to cocreate naturally. Sociometry has produced several methods of this type. Two illustrations are the sociometric experiment in situ and the sociodrama in situ. They are dynamic forms of social operationism, they define their processes in terms of the action taken by the social actors as they share in common objectives.

Sociometric methods are a synthesis of subjective with objective methods of investigation. A sociometric experiment in situ brings into realization in an unprecedented degree (a) the autonomy of the individual characters, (b) their observation and evaluation by others, (c) measurement of the subjective *and* the objective aspects of their behavior, (d) the autonomy of individual groups and the interaction between them. The same is true about sociodrama; it is a synthesis of subjective and objective methods of

investigation: (a) the protagonists portray their own experiences in their words and actions but also, (b) they are observed and evaluated by others, and (c) measurement and recordings of the combined subjective and objective phases of production are made.

The sociometric experiment aims to change the old social order into a new social order. It is a design to rebuild the groups, if necessary, so that the official surface structure is as near as possible to the depth structure. The sociometric test, in its dynamic form, is a revolutionary category of investigation. It upsets the group from within and its relation to other groups; it produces a social revolution on a microscopic scale. If it does not produce an upheaval in some degree, it may arouse suspicion that the investigator has modified it so—in respect for an existing social order—that it becomes a harmless, poverty-stricken instrument.

"One of the reasons why sociometry has been so productive and why it promises more in the future is because it is immediately *useful*. Being useful, it avoids the fictitious flavor of most so-called 'sociological experiments'. . . . A second reason for its success and promise is that it deals with concrete, observable data, with *small social systems*. . . . It would be nice to know all about complicated social systems but it is safe to say that we never shall know very much about them until we have mastered the structure and functioning of simple systems. Then our more inclusive generalizations, which always must be more or less inferential, can be derived, tested, and revised from what we veritably do know about simple, observable, manipulable social systems. . . . Thus it has been, still is, and ever shall be in the physical and biological sciences; thus must it also be in the social sciences" (2).

THE NATURE OF THE WARMING UP PROCESS AND THE EXPERIMENTAL METHOD

We speak, often incautiously, of sociometric generalizations and laws, obviously assuming that there are certain regularities operating in human relations as in other parts of the universe. What justifications can we offer for such a claim? The official arbiter of validation has been the canon of the experimental method, but in the area of human relations the material and the logical part of its inquiry show a conflict difficult to reconcile due to the nature of the warming up process. We shall try now to discuss its nature, how the weakness of the experimental method can be overcome and a new model replace the old.

The warming up process can be defined as *the operational expression of*

spontaneity. (Spontaneity is the variable degree of satisfactory response an individual manifests in a situation of a variable degree of novelty.) When undertaking research on the warming up process of the person it is profitable to view the process from the top down: first is the actor, then the organism, and then the act. You cannot produce acts unless you have an organism, and you cannot make your organism productive unless it becomes an actor. (*The organism in the field becomes the actor in situ.*) You cannot study the actor in reverse if he is unable to act in reverse. You cannot study him but along the lines of his productivity emerging at the time of your study. If you induce him—for research reasons—to warm up in a direction for which he is not ready or which is contrary to his inclinations, you introduce an element of artificiality into your “control” which cannot be ironed out adequately by inferential and logical argumentation. The human actor may lose his spontaneity in an instant, and a few moments later he may have a hard time to recall the experience during the act. In order to be adequate in a particular act he should begin to warm up as near to the act as possible and you ought to know when he begins to warm up. (*Rule of the warming up process or active productivity.*) In the warming up process of the group it is best to view all the coactors in situ and to view them in the direction of their productivity. In order to view them you have to move with them, but how can you move with them unless you, the experimenter, are a part of the movement, a coactor? The safest way to be in the warming up process yourself is to become a member of the group. (*Rule of “coaction” of the researcher with group.*) But by becoming a member of the group you are robbed of your role of the investigator who is to be outside of it, projecting, creating, and manipulating the experiment. You cannot be a member and simultaneously a “secret agent” of the experimental method. The way out is to give every member of the group research status, to make them *all* experimenters and to agree with them in the carrying out of a social experiment. If a group has a hundred persons there are now a hundred experimenters and as each is carrying on his “own experiment” there are a hundred experiments and a co-ordination of each single experiment with every other is required. Sociometry is the sociology of the people, by the people, and for the people; here this axiom is applied to social research itself. (*Rule of universal participation in action.*) But the experimenter, by giving up his identity—what has he gained for the logical part of his inquiry? At first sight it does not seem that he has gained anything. It does not seem that he can set up, in order to prove a hypothesis, two controlled contrasting situations more easily than he

could before. But socratically speaking he has gained something: he is having experience, experience in situ; he is learning. As a dialectic movement toward a genuine socioexperimental method of the future he is making slow but real progress. Instead of hurrying to test a hypothesis by quickly constructing a control group versus an experimental group, a pseudo-experiment with pseudo-results, he takes his time for thinking his new situation through. A hypothesis might still be true although never validated. It is better to wait until it can be truly validated instead of unvalidated by validating it prematurely. As time goes on he may become better adjusted to his double role, since he shares it with every member of his group. But when he plans an experiment he may watch his step and not impose it too hastily on the group. Indeed, he should not assume the allures of an experimenter more than any other member. Living in the group he will soon discover that there is a deep discrepancy between the official and the secret behavior of members, that they are in a perennial conflict between official and secret needs, official and secret value systems. (*Rule of dynamic difference in group structure, peripheral versus central.*) He will also soon discover that the individuals are driven at times by private, at other times by collective aspirations, which break up the group into another line of cleavage. (*Group cleavage produced by psycho- and sociostructuring.*) Before any experimental design or any social program is proposed he has to take into account the actual constitution of the group. In order to give every member adequate motivation to participate spontaneously, every participant should feel about the experiment that "it is his own cause," that "it is itself a motive, an incentive, a purpose primarily for him (the subject) and not for the one who promotes the idea (the tester, the employer, or any other power agent)," that "it is identical with a life goal (of the subject)," that "it is an opportunity for him to become an active agent in matters concerning his life situation" (13). (*Rule of adequate motivation.*) As his learning expands to knowing how to bore with research ideas from within he may get the idea of being a member of two or more groups, one serving as a control of the other. This should not be an experiment of nature but one consciously and systematically created and projected by the total group. All this, of course, could only happen if the warming up processes of all human characters and all participating groups coalesce naturally into an experiment. (*Rule of "gradual" inclusion of all extraneous criteria.*) There are many steps and more barriers which a sensitive crew of coexperimenters might encounter on the way to a scientific utopia. However little or far they advance they never fool themselves and never fool others; they prefer the slow dialectic

process of the sociometric experiment *in situ* to social experiments which are based on inference and logic only.

The sociometric experiment does not base its discoveries upon the interview or "questionnaire" method (a frequent misunderstanding); it is an action method, an action practice. The sociometric researcher assumes the position of the "status nascendi in research"; he is interiorating the experimental method, a participating actor. He insists on sticking to the material inquiry and does not permit himself to step out into the logical part unless he can safely do so. He tries to measure what can be measured, to validate what can be validated, but he disdains measurement and validation for their own sakes. However, measurement is an inherent part of sociometric dialectics. He looks for validation which springs from the material itself without referring to extraneous criteria. The sociometric index, for instance, is a validating index of choice-rejection behavior. Criswell (4) points out that "the patterns obtained are intrinsically meaningful and do not have to be validated by reference to outside criteria." The experimental method could not prove anything beyond what the sociometric index proves.

The fundamental contributions which sociometry has made to the social sciences are its *methods of discovery* in their central area, one in which knowledge was practically nil, the area of interpersonal and intergroup relations. The experimental method is concerned with methods of proof only. In a healthy, developing natural science, methods of discovery come first, methods of proof later. Methods of proof should grow naturally out of the methods of discovery. Mills canon of the experimental method has grown out of physics, constructed to meet the needs of *its* methods of discovery. The social sciences need to invent methods of proof indigenous to the structure of its material. The sociometric methods of discovery are numerous and still growing. (1. Acquaintance test—acquaintance index—acquaintance diagram. 2. Sociometric test—sociometric index—sociogram or sociomatrix. 3. Role test—role index—role diagram. 4. Interaction test—interaction index—interaction diagram. 5. Spontaneity test—spontaneity quotient—spontaneity scales. 6. Psychodrama—recording—process analysis. 7. Sociodrama—recording—process analysis. 8. The living newspaper. 9. The therapeutic motion picture.)

In sociometric group analysis *several factors* are jointly used. Sociometry is not a single factor method. The sociometric test explores only *one* factor, attraction, rejection or tele; the spontaneity tests explores spontaneity, the S factor; the role test, the role factor. Through painstaking, direct investigation of small groups we may learn to explore smaller and

smaller systems (microsociometry) and gradually tackle larger and larger social systems (macrosociometry), until the whole of human society can be treated like a single system. Sociometry is to a large extent a classificatory science, and generalizations can be made on the basis of such classifications. Geography and geology are examples of other classificatory sciences. Their counterpart within sociometry is psychological geography or sociography. Some day a psychological geography of our planetary human population will be drawn without any reference to outside criteria. In fact, as soon as the whole field can be tackled as a unit, the cause-effect relation as well as any other relation may be visible; then there will not be any criterion left outside of it and the experimental method will not be necessary for proof. It can be hypothecated about God that He gets a picture of the whole universe in an instant. Metaphorically, God might be called a sociometrist on a cosmic scale. All criteria which are for men exterior are for Him interior. God does not need an experimental method in order to prove a hypothesis about a cause-effect relationship; He can see it with His own eyes.

In the course of sociometric research we often encounter naturally contrasting situations of which we take advantage. But the dilemma of the warming up process comes into play when the experimenter is trying to *create* contrasting situations, a combination of factors desirable for logical inquiry, arranging the conditions in the community so that they fit the requirements of precise control. As sociometric consciousness grows, the people and their governments will co-operate and participate in social research. Human beings cannot be manipulated like rats and forced into the combinations required without a gross error being introduced into the experiment. By the experimental conditioning the individuals may be *changed*, their warming up processes may be distorted. Therefore, the experiment does not measure what it intends to measure. Sooner or later the individuals, due to the spontaneous inclinations and the constellations of the warming up process, may return to their pre-experimental state of mind.

The sociometric method offers a solution to this dilemma. In the sociometric experiment a new set of rules has been generated. (1) The experiment has to be carried out *in situ*, that is, in their localities, in the setting in which the human characters are most spontaneous, to which they are most intensively warmed up and about which they know most from their own experiences. Because of the nature of the warming up process, if the human characters are forcibly removed from the scene of their loves and crimes, the value of their communications—even if they are made in

honesty—cannot be considered as of equal value. This condition may change in a sociometric society as spontaneity training becomes integrated into its institutional processes. (2) All human characters of the group or the community are investigators of the situation they have in common. As such they may assume different functions in the experimental setup but no individual is left out from the research crew, just as nobody should be left out from receiving food and shelter. This is in total contradiction with a current fashion in experimentation that there is no need for the people themselves to be present as part of the experiment and that there is no need for the experimenter himself to perform the actual experiment. The *ex post facto* design is not an experiment in the true sense of the word. The exponents of this type of research, shrinking away from the difficulties of the direct action approach, fearful of the involvements of the present and that they may not be able to get a precise answer from nature when meeting it face to face, retreat into the graveyards of the past. This is the greatest triumph for Mill's dictum that the social sciences are unable to apply the experimental method to their data. The physical autocrat has been able to order around and manipulate to his scientific pleasure physical objects, plants, and lower animals. But his successor, "the social autocrat," the higher he went up the evolutionary ladder, the more unremunerative the research became.

It is therefore not due to the inferiority of social science as a natural science that Mill's canon cannot be applied; he offered the wrong model. The new model, the sociometric experiment *in situ*, is in its infancy but it holds great promise. Mill, like many of his modern followers a spectator sociologist, looked at the social universe with the detachment of an astronomer who looks at the universe of stars and said: No. Marx, an actor sociologist, little conscious of experimental designs said: Yes. Whence come these two diametrically opposed positions? The reasons are about as follows: the great religious experimenters *in situ*, Buddha, Christ, and Ghandi, the social utopists, Fourier and Owen; the social realists, Marx and Lenin—however unreconcilable their various approaches—knew something about the nature of the warming up process, the spontaneity of the individual and of the masses. They knew intuitively that an experimental design of society to be successful must follow closely and anticipate a design of living which is in a dreamlike way inherent in the people. Although they never had the intention of validating their hypothetical social orders, they contributed infinitely more to whatever knowledge the social sciences have accumulated to date than all the artificially constructed social experiments put together.

In the widest sense of the word there are two types of social research: the peripheral, external, indirect, pseudo-objective versus the central, internal, direct, subjective-objective type. There are two extreme sociological imperatives: (1) Mankind may *passively* wait for the day when the scientific utopia project of social research has completed its task; (2) Mankind may, now and here, *actively* take its social destiny in its own hands—initiate experiments and simultaneously check their validity.

THE OLD AND NEW MODEL OF THE EXPERIMENTAL METHOD

The transition from the old to the new model of experimentation is no easy task. Some of the problems which the material structure of the new model imposes upon the imagination of the investigator are here, because of their importance, illustrated in detail by a comparison between two sociometrically oriented studies ("Advances in Sociometric Technique," Moreno-Jennings (19), and "An Experimental Approach to the Study of Autocracy and Democracy," Lewin-Lippitt (7)). The theoretical and experimental background for a crucial phase in both studies was Moreno's "Who Shall Survive?" (13), one of whose chief concerns was to show by means of sociometric tests the contrast between authoritarian and spontaneous group structure in all the classrooms throughout a school community, and in a reformatory throughout all the homes and workshops. The appearance of the Moreno studies ranged from 1931 to 1936. The last study concerned with authoritative and sociometric structure appeared in February, 1936. The first report of Lewin and Lippitt appeared early in 1938. One would expect, therefore, some progress or change in approach. The comments to the Lewin-Lippitt study are here strictly *limited to the use of sociometric and role-playing methods*, the relevance they may have for the problem of the equation of groups and the creating of new experimental groups. It is beyond my intention to judge as to the significance of other variables (teacher ratings of social behavior, school records, socioeconomic status, etc.) and as to the final value of the brilliant study. For the sake of brevity, I will refer to the two studies by mentioning the initials of the collaborators, M-J and L-L.

The initial procedure in both studies is similar, "A preliminary sociometric survey was made of the affinities and rejections existing in the two classrooms. . . . Such data might always be analyzed with a double frame of reference, that of the individual group member and of the group as a dynamic unity." (L-L) The objectives are similar: to study, among other things, the difference between "autocratic and democratic" (L-L), "authori-

tative and sociometric" (M-J) group structure. The *difference* begins with the following proposition of Lewin-Lippitt, "Instead of utilizing the groups in schools, clubs, factories, one should create groups experimentally. . . . With a sociogram of each group at hand the groups were selected (one from each schoolroom) from the available volunteers so that the groups would be as nearly equated as possible on the number of potency of friendship and rejection relationships. . . . Instead of choosing a clique of close friends five children were chosen in each case who had expressed little relationship with each other, either in the school situation or in playing together in nonschool groupings. . . . In a ten-minute preliminary meeting with each group the leader made it clear that the aim of the club would be to make theatrical masks (a new activity for all of the children). . . . Two half-hour meetings a week were held with each group, the same experimenter being the leader in both clubs." (L-L) It appears that Lewin-Lippitt followed the sociometric model up to a certain point but then returned to Mill's model of the experimental method. By doing this they were caught in a tailspin of unreality and artificiality. In comparison, let us take a look at Moreno-Jennings' study. It dealt with the grouping of children in a dining room. This situation was not "created" by the experimenters, but it was in the nature of the situation that the children had to be arranged in some manner for their meal. An authoritatively run community (a reformatory for girls) was submitted to a sociometric experiment. The sociometric test took place in the living quarters, workshops, schoolrooms, and among other places, in every dining room. Every sociogram showed how the democratic process would run in dramatic contrast with the existing authoritative organization. In the specific dining room in which this study was made there were twenty-one girls and they were just getting ready to eat. A record was made of the order in which they were seated, as we expected to find here the results of a dictatorial policy, an authoritative structure of grouping. A "technique of placement is one applied strictly from the point of view of the authoritative supervisor of the dining room. She places them in such a fashion that they produce the least trouble to her, without regard to the way the girls themselves feel about the placements." (M-J) Tabulation A is a record of the authoritatively determined grouping. A second experiment was made in order to discover the most spontaneous structure of the group, a "complete laissez faire" (M-J) in which the authoritative supervisor was removed from the dining room and the girls were told to feel entirely unrestrained and to sit down wherever they wished; a laissez faire structure resulted: "We may let them place themselves as they wish and watch the result. A girl 'A' seats herself

at Table 1; eight girls who are drawn to her try to place themselves at the same table. But Table 1 can hold only three more. The result is a struggle and somebody has to interfere and arrange them in some arbitrary manner. A girl 'B' runs to Table 2, but nobody attempts to join her; thus three places at the table remain unused." (M-J) The laissez faire test produced confusion: "We find that the technique of letting the girls place themselves works out to be impracticable. It brings forth difficulties which enforce arbitrary, authoritative interference with their wishes, the opposite principle from the one which was intended, a free, democratic, individualistic process." (M-J) A final experiment was set up, a sociometric, democratic

TABULATION A

Original Seating Arrangement — Authoritarian

Table 1	Table 3	Table 5
Belle	Flora	Anna
Dorothy	Pearl	Harriet
Angeline	Ida	Grace
	Evelyn	Edith
Table 2	Table 4	Table 6
Beth	Clarissa	Kathryn
Rose	Helen	Lena
May	Gladys	Ellen
		Mary

TABULATION B

New Seating Arrangement — Sociometric

Table 1	Table 3	Table 5
Belle	Kathryn	Dorothy
Anna	Pearl	Mary
Edith	Grace	Beth
Harriet	Ida	
Table 2	Table 4	Table 6
Helen	Flora	May
Angeline	Ellen	Rose
Gladys	Lena	Clarissa
	Evelyn	

EXPLANATORY NOTE

The placement analysis of the two tabulations A and B shows that of the twenty-one girls seated under the influence of the authoritative supervisor, only three (14%), Belle (Table 1), Ida, and Pearl (Table 3) sit at the same table after the results of the sociometric test were considered.

Note that in the laissez faire test Table 1 was crowded by nine girls although it could not place but four; Table 2 had only one girl although it could have seated three more.

method of procedure: "to ask the girls with whom they want to sit at the same table, and, if every table seats at least four, to give every girl three choices; to tell them that every effort will be made that each may have at her table at least one of her choices, and, if possible, her first choice. . . . The structure of affinities one for another is charted. The best possible relationship available within the structure of interrelations defines the optimum of placement. (Tabulation B) . . . It is a matter of principle to give every girl the best possible placement regardless of what her record may be or what experience the housemother may have had in regard to any two girls who want to sit together at the same table. We do not begin with prejudice but wait to see how their conduct turns out." (M-J) Our hypothesis was that by means of this method we may get an insight into the spontaneous democratic structure and will be able to compare the deviations from the laissez faire and the authoritative structure of grouping, as portrayed in the sociograms of each. The experiment was carried on longitudinally; the test was repeated at intervals of eight weeks. The sociometric data were quantified and the sociometric indices between the intervals compared.

Let us now examine critically both experiments. In the Lewin-Lippitt experiment a sociometric test was applied to the children in the classrooms. The experimenters do not specify clearly what criterion was used, an unfortunate omission. A superficial reader might get the impression that it is *not* important which criterion is used, that it is comparatively easy to arrive at a sociogram of attractions and rejections. However, using *no* criterion or a very *weak* criterion, the findings portrayed in the sociogram may not reveal sufficiently the structure of the group. They proceeded then to nearly *equate* the groups on the basis of the sociograms. Five children who showed as little relationship as possible were chosen from each group. From the point of view of a rigorous analysis of what a sociometric equation entails, Lewin-Lippitt's effort was unsatisfactory. One gains the impression that their experience with reading sociograms was too small to warrant an effort at equating the two groups. In addition, they did not attempt the "positive" equation of two groups (that is, the comparison of their actual configuration) but what might be called a "negative" equation, calling two groups of individuals nearly equated because "little relationship" was found between them in the sociogram. That leaves the whole idea of sociometric equation hanging in the air. What does "little relationship" mean, sociometrically? These two sets of individuals might have shown in regard to a dozen other criteria a great deal of relationship which the experimenters should have

tested before they called the two groups equated and made them the basis for a serious application of the experimental method. Individuals who form one structure in a home group may form a different one in a work group and a very different one again in a recreational group. The experimenters do not imply that they have compared the sociograms of the two groups in reference to sociograms resulting from other criteria. A number of vital criteria should be used before any opinion can be reached that the children chosen for each club have little or no relationship, particularly before such a gravely loaded word as "equated" is in science can be used. One can say that the foundations of the study were not well laid, thus making the conclusions drawn from the whole experiment spurious, even from the point of view of logical inquiry. Another negligence is the omission of sociometrizing the two clubs of five individuals before the experiment was begun. If one "creates groups experimentally" he should know what he has created. The experimenters might have found that the two groups of children, when sociometrized in reference to the new criterion of making masks, would have produced sociograms which would have shown a great many relationships among them. Furthermore, differences in sociometric structure in reference to the maskmaking criterion itself would have been found. Some of the children may have had a greater skill for the activity of maskmaking, some may have shown little skill or interest. Such an analysis suggests how dangerous predominantly logical manipulation is and how easily an experimenter, when moving away from the material structure of the group, loses contact with its realities and is tricked by a game of words and numbers. It also stands to reason that the sociometric tests should have been repeated before every experimental phase, to see what changes had taken place in the structure of the two clubs before, after, and between sessions. It appears as if the experiments have been done without the currently operating dynamics of the group being known. Even if interviews and observations of the children were used, their feelings for each other and the picture of the total structure of their relationships would not have been attained without repeated sociometric surveys. Such surveys might have revealed that maskmaking Club 1 and maskmaking Club 2 produced sociograms which were far from being equated. The experimenters may have found, for instance, that one of the maskmaking sociograms was from the start characterized by an autocratic type of structure, one of the children being the center of choices; the other set might have shown to have started with a more democratic distribution of the choices and rejections. The initial sociometric picture of the two clubs might have influenced or resisted the

experiment of autocratic and democratic atmospheres in one or another direction. The negligence of omitting these sociometric tests to start with clouded the validity of the conclusions. This does not exclude the possibility that the hypotheses of autocratic and democratic atmospheres could be true. In fact, it had already been fairly well demonstrated by my own study in Hudson, showing the contrasting structure between authoritatively arranged and sociometrically arranged groups. It was the unsatisfactory manipulation of sociometric data by Lewin and Lippitt which was at fault, and this brings us straight back to the problem of the warming up process of the children before the experimental situation of maskmaking was initiated. We know from reading sociograms that if you take one or more individuals out of a group—depending, of course, upon their positions within it—the rest of the sociogram does not remain the same but undergoes almost instantly a revolutionary change. By taking out five individuals the remaining members redirect their outgoing attractions and repulsions and a considerable struggle between the key individuals might be the result. On the other hand, the five individuals going out of a group and forming a new one, being cut out of an older group in which they may have had strong attractions or rejections towards certain individuals, redirected their own warming up processes toward the individuals who were available in the new group. They had no choice but to operate or interact with the individuals available in the maskmaking club. This restraint was not one of their own choice, but imposed upon both the autocratic and democratic clubs by the experimenters.

Now let us examine the two maskmaking experiments themselves. Several experimenters were used in each of the two cases to assume either an autocratic or democratic role toward the participants of each club. This resembles psychodramatic work on the reality level. The difficulty here again is not in the logical manipulation but just the opposite; there is an excess of logical manipulation, one of the weaknesses of Lewin's experiments with human relations. The difficulty is chiefly in a lack of directness and concreteness as to the material structure of the experiment. The first loophole is the playing of two opposite roles by the same person. This is in psychodramatic work known as an "auxiliary ego" playing at two different occasions different roles. It is known among psychodramatists that it requires considerable training for an auxiliary ego to stick to a persistent pattern of one role over a period of time. The difficulty is increased if the same person is to embody two different roles alternately. Lewin and Lippitt do not state that the auxiliary egos or leaders had received role training as autocratic or democratic leaders, that they had learned to remove their

own private biases and spontaneous inclinations, that they had learned to keep the two roles neatly apart. They may have done so, but at the time of their publication the ideas of role training and the warming up process, the private involvements of the auxiliary ego and the effect of a role production upon group structure, in other words, psychodramatic theory and practice, was known to a small group of students only. The question is therefore, how adequately were the experimenters *able* to perform in these roles? How were they selected and trained in the taking of roles? This is a grave omission because auxiliary egos often have deep involvements in regard to some roles and little in regard to others. What guarantee do we have that the experimenters were not excellently disposed for the role of the democratic leader, but very poorly disposed for the role of the autocratic leader, or vice versa? Thus they might have influenced the outcome of the experiment by their role behavior, being stronger in the presentation of one or the other role. Depending upon his own role structure, the weight of his personal influence might have favored the autocratic or the democratic atmosphere of the experiment. In addition, many performers, in the process of role taking, give lip service to democratic principles but in their gestures and bearing are autocratic—or the reverse may be true. A careful description of these psychological problems was therefore required.

Summing up the critique of the Lewin-Lippitt experiment, they must be commended for having recognized the problem; they failed because of insufficient material inquiry into the sociometric situation. With the advent of sociometry the group as a dynamic structural unit was discovered. In the equating of two groups this had to be taken into account. The equating in the old manner on the basis of individual characteristics and traits of their members—like intelligence, economic status, nationality, sex, religion, occupation, and so forth—had become unsatisfactory.

Let us in turn examine the Moreno-Jennings experiment. The problem of sociometric equation was not new at the time of Lewin-Lippitt's research. I dealt with it in my studies of sociometric group structures as they deviate from chance (20). To my surprise I found then that sociometric equation is full of loopholes which one has to learn to avoid. The same two social configurations, which appeared nearly equated quantitatively in number of choices received or given, appeared structurally unequated in number of isolates, unreciprocated pairs, chains, triangles, leader structures. Furthermore, a careful inquiry into the material situation indicates that the equation of two groups from the point of view of their dynamic structure is not sufficient if a single factor only, the sociometric index, is considered. The

dynamic structure of groups is far more complex. Their respective acquaintance diagrams (13), role diagrams (15, 16, 21), action diagrams (10), spontaneity scales, have to be explored with a view of equating them in regard to the basic dimensions which determine their living structure. Such rigorous insistence upon *precision of the "material" inquiry* makes logical manipulation and "matching for precision of control" (3, 6) difficult. But it is better that we face the problem than that we delude ourselves. "The social configurations portrayed in our sociograms are elementary and rough in texture compared with the complex relationships, rhythms, and tempos operating within a living social aggregate. With the devising of new sociometric techniques and with the improvement of the present instruments, the more subtle and more mature processes—the economic milieu, the religious milieu, the cultural milieu, which operate within social aggregates—will be made increasingly comprehensible. It is our contention that these entities (economy, religion, or culture), whatever the logic of their existence may be, cannot be so impersonal as to exist independent of the societies in which the persons actually think, live, and act. These processes must express themselves within living social aggregates although their interaction may be more difficult to trace. It is to the comprehension of these richly textured, integrated, and fully matured configurations that sociometric work aspires" (20). That may explain my ever groping for and inventing of new instruments as psychodrama, sociodrama, axiodrama, in order to gain a more complete picture of the social systems nearest to ourselves.

It is significant that the two groups which Lewin and Lippitt tried to equate consisted of five children each, the two groups of Moreno and Jennings of 21 children each—in both cases extremely small groups; and at both times the equation ended in failure: in the first instance because of premature logical manipulation, in the second because of insistence on further material inquiry, postponing the equating indefinitely until it could be tried with a reasonable expectation of validity. Looking from here at a vast number of projects in social research now under way in many places which pretend to be of particularly high scientific order because the experimental method of inquiry is used, we notice that these projects usually deal with large numbers of people and the analysis of many factors and that they neglect in their matching of individuals the sociodynamic effects of group structure. But what is true about the miniature groups described above must be equally true for large groups, and probably more true the larger the groups are. I do not doubt for a moment the earnestness of such students and their hope that someday, somewhere, what they do will be helpful. But

when a science is young and in need of elementary information, logical elegance can be just as tragi-comic as a child crying for food and the mother feeding him with dolls instead. As an illustration for this trend in research I may quote from F. Stuart Chapin's recent book (3)—it is an *ex post facto* experimental design which he describes—"The working hypothesis of this study was: A greater degree of progress in high school leads to a correspondingly higher degree of economic adjustment in the community. . . . This experiment was based upon the high school records and community experiences of 2,127 boys and girls who left four St. Paul high schools in the school year of 1926, as graduates or after having completed from one to three years of their high school course. . . . In this study an attempt was made to hold constant six factors that would influence eventual economic adjustment if they were allowed to vary. . . . *we have made approximately equal* six factors—fathers' occupation, parents' nationality, neighborhood status, sex, age in years, and average high school grades. . . . The purpose of the Christiansen study was to isolate the presumed cause-and-effect relationship between length of exposure to high school education as a cause (from 1922 to 1926) and economic adjustment as the effect (as found in 1935.)"

The structure of the socius has no place in such studies. The "relevant" factors are individual and social traits which often are chosen as arbitrarily as the trivial hypotheses themselves (for instance, low housing standards and rentals as cause, increased tuberculosis death rate as effect; length of high school education as cause, high degree of economic adjustment as effect). The experimenter himself is replaced by an examiner of files and records, the "experimentees" are left out, and replaced by the social ghosts of their vital statistics. It is a refined form of population research and an ingenious exercise in logical manipulations—it could be called therefore "demometry" (Demos-people, metrum measure), but it has nothing to do with the most vital form of sociometry in which the socius and the metrum are treated with equal intensity. (Sociometry, broadly considered, includes, as Ernest W. Burgess pointed out in his "Sociological Research Methods" in the Special Semicentennial Issue of *The American Journal of Sociology*, Vol. L, No. 6, May 1945, besides the group of chief exponents of sociometry (J. L. Moreno, Helen H. Jennings, Joan H. Criswell, George A. Lundberg, Charles P. Loomis, Leslie D. Zeleny, Merle E. Bonney, Mary L. Northway, Stuart C. Dodd, W. I. Newstetter, among others) the work of F. Stuart Chapin, Emory S. Bogardus, and the field theoretical approach of Kurt Lewin. Bogardus' opinion in "Measurement of Person-Group Relations," SOCIOM-

ETRY, Volume 10, Number 4, p. 306, coincides with that of Burgess, "The social distance approach may be viewed as a form of sociometrics . . ." Chapin considers his work as a form of sociometry, *Ibid.*, pp. 23-28. I am taking exception here, however, to Chapin's change in definition of what sociometry is. By identifying it with social measurement at large he deflates its meaning. When I coined and defined sociometry, the study of the socius was given the central position. In Chapin's definition the metrum moves into the center, and the socius is pushed into the periphery, or entirely out of material existence. Dialectically speaking the sociometry which treats socius and metrum with equal intensity should be considered as the nucleus of all sociometric inquiry. In its periphery belongs the work of Bogardus as a projective method in *sociometry*, Chapin's work as a form of *demometry*.)

Florian Znaniecki has clarified some aspects of this problem, "There seem to be two reasons why sociologists have been more susceptible to the influence of mathematical dogmatism than biologists, chemists, or experimental physicists. In the social field mathematics was applied first to demographic statistics, whose original assumption was that the human individual is an ultimate 'indivisible' entity and that consequently every collective phenomenon is a mere sum of individual phenomena. The majority of sociologists, however, are by now fully aware that the human individual as member of a collectivity is not an independent unit but a participant in collective systems and processes and that the main task of mathematical methods in sociology is the quantitative analysis of such systems and processes. A step toward the final elimination of this old source of confusion is the recent development of sociometry—a method of research with important, though as yet only partly realized, possibilities."

THE SOCIOMETRIC MODEL OF EXPERIMENT AND MARXIAN SOCIOLOGY

In his "Theses on Feuerbach" Marx coined a phrase, "The philosophers have only *interpreted* the world in various ways; the point however is to *change* it." This quotation may lead us straight into his theory and practice of social revolution. But we are not interested here in this aspect of Marxism (18). It may also lead us to consider what contribution Marxian sociology has made toward the experimental method. This is our concern. We may give this phrase a new slant by saying: the only sure way of finding out *the basic structure of human society* is by trying to change it. But Marx was, at least consciously, not interested in finding out what "the basic structure of human society is;" he did not know that it had one. He wished to change it by applying the instruments of social revolution as he

had constructed them. He possessed too honest an intellect and was too great a realist not to wish to know the full truth about the problems of social relations to which he had dedicated his whole life; but he thought that he knew already what human society needs. The changer in him was at times more powerful than the researcher. Throughout his writings there is a conflict visible between the two. His critical mind did not stay contented with any particular blueprint of a social revolution. He was revising his theories continuously. It would be worth while to explore the anti-Marx in Marx. Because of this wavering between the two extremes, Marx came in fleeting moments of intuition closer to the idea of a genuine social experiment than many of his adversaries. Marx did not realize, however, that human society had a structure of its own which can be investigated and determined with a high degree of precision. For him human society was like an immense target, a vast field seething with human action. He explored the forces and ideologies which "entered" into this field. But human society as such was for him an amorphous, undifferentiated mass of individuals and events, exposed to these powerful ideological forces he had discovered. Economic institutions like capitalism; cultural institutions like religion, family; political institutions like forms of government, their origin and evolution throughout history and the social stratifications they caused—they were the foci of his dialectic materialism. But that human society had a social structure of its own which required special instruments for investigation and for change did not enter into his mental perspective. He could see only the reflection of an intense struggle between two ideological forces, capital and labor. It may be said that he, perhaps the greatest realist of the evaluation of social forces impinging upon human society from the outside, was an irrealist and an illusionist as far as the "inside" structure of human society is concerned. But it is from this plane that an explanation can be derived for the irrational character of the social revolutions which he, Engels, Lenin, and Trotsky have instigated.

Marx proposed to deal with real people in the actual world and to cure their most pressing problems. As we see, unfortunately for the world, he did not engage himself deeply enough with material inquiry. He had little respect for the individual and for small social units. He suffered from an excess of revolutionary dogmatism, just as some contemporary sociologists suffer from an excess of logical dogmatism. His faith in social change and social justice was greater than his desire for patient investigation of the delicate and detailed material structure of the human situation. Marx had a practical idea of what genuine experiment is like, but he resembled the

prescientific physician who had to apply remedies to the ailing body without knowing its anatomy, histology, and physiology.

The Marxist revolutionists do not wait for the "event" to happen. They fear delay of the uprising of the masses, or even that this may never happen, and so they *produce* it by instigating and arousing them (and they call this process the "will" of the masses). Therefore, up to a certain point, the social revolutionists create unconsciously the atmosphere of a sociometric experiment: they turn the collective life situation—where it is, in situ—into a social laboratory. But the revolutionary operation is carried out in the dark; the interindividual and sociodynamic structure of the masses involved in the action are unknown—except for certain ideological premises and the role structure on the surface—certain key individuals in the "role" of the laborer versus others in the "role" of the capitalist. The danger of the Marxist actionists is that when they instigate and arouse the masses they may stir them up to *more* action than they are spontaneously inclined and to more than they can eventually control. The result is that not only the revolutionary gains (if there are any) are of doubtful value—they do not know when a relapse or a regression to a prerevolutionary or worse state might take place, but also the social analysis itself is bound to be faulty and full of indissoluble implications because they do not know when the revolutionary action was started, what structure the masses had in statu nascendi, nor the specific dynamic factors operating within them.

SOCIOMETRY AND MARXISM*

It is now a century since the communist manifesto was proclaimed by Karl Marx and Friedrich Engels. It is three decades since the Russian revolution and the dictatorship of the proletariat was established under the leadership of Lenin and Trotsky. The eyes of all mankind were and still are directed towards these events with a hope, unparalleled since the emergence of Christianity, and with a question mark. What is the total effect and change produced by this Magna Charta of revolutionary social science? Which are its positive returns and negative drawbacks?

Marx made a distinction between the private property of the means of production and the private property of consumers goods. The surplus earnings, called by him "surplus value", because the means of production are owned by a special class, the capitalist class, are collected by a few,

*Presidential Address, American Sociometric Association, Christmas Meeting, Commodore Hotel, December 26, 1947. Partly published in *Cahiers Internationaux de Sociologie*, 1949, "Methode Experimentale, Sociometrie et Marxism".

the owners, instead of by the many, the workers. He raised the question as to who should govern the means of production in order to cure society from uneven and unjust distribution of income. Thus far Marx was correct. But the conclusions he drew from it have not stood up in the crucial test of reality.

His first conclusion was that it is impossible to establish a "classless" society at once. For the transition period the means of production should be taken over and governed by the majority, the proletariat, and a government of the workers, "the dictatorship of the proletariat" should be established. He expected that this "secondary" state would gradually vanish and a totally socialistic society result. Marx was wrong in this conclusion.

A few months after the Russian revolution of 1917 I predicted that "the revolution cannot succeed without a specific sociometric outlook. The substitution of the rule of one class for the other, as for instance the replacement of the rule of the bourgeoisie by the rule of the proletariat is secondary. The essential task is that the second, newly created state, the dictatorship of the proletariat, installed by the suppressed people as an organ of revolution, truly and really vanishes. This state cannot eliminate itself unless a complete inner restructuring of all parts of society has taken place" (22). Fifteen years later I continued my appraisal of the Russian revolution as follows: The error of Marx was the contention "that the economic and psychological problem of Man cannot be attacked as a unit at one time, that the psychological problem must wait, that so to speak two different revolutions are necessary, that the economic revolution has to precede the psychological and creative revolution of human society. It was a theoretical-practical obsession with strategic procedure, the splitting of a unit into two different issues". "The change of economic structure in Russia since the revolution of 1917 does not appear to be accompanied by the expected changes in the psychology of human interrelations. The psychological changes lag far behind the economic changes, the communistic society is still in its first phase, the state has not yet *withered away*. The Communistic society in its highest state may be a myth, or to apply to it one of his own phrases, "an opium for the people" to be set aside afterwards as unattainable and Utopian, as soon as the economic program of the first phase, the dictatorship of the proletariat, is achieved." (13) Well, the proletarian state has not vanished, it does not intend to vanish, it has become so strongly entrenched that there is no instrument available by which it could be eliminated. The dictatorship of the proletariat has become just a dictatorship. A new proletarian revolution would be required to eliminate it, a revolution just as violent, if not

more, as the revolution which swept away the government of the Czar thirty years ago.

My thesis is that the split in the original matrix of socialist revolutionary theory is the primary cause for the ultimate failure of the revolution. It provides us with a key for understanding the puzzling developments and abrupt changes in policy which have taken place in Soviet Russia during the thirty years of its existence. It is certain that the founder of socialism did not lack the *vision* but the *knowledge* for formulating a complete theory of revolution, or at least a more complete one, one which would have taken care of all the dimensions of society. He prepared a "partial" blueprint, and left the rest in the dark, to circumstance. It is perhaps fair to say that Marx put into the blueprint only what he *knew* and left out what he did not know. He knew that he discovered in what can be called the *capitalist syndrome* an important phenomenon and he started the revolution with the part he knew. He did not know the rest of the social structure and he did not know of instruments by means of which he could explore it. That is why he broke the pattern of revolution into several steps and postponed action on them, indefinitely, until more would be known about their execution.

The second conclusion of Marx was that the "surplus" value is found particularly in capitalistic societies. This was correct within certain limits: it is correct only if the capitalistic-economic phenomena are studied in isolation, apart from the rest and without considering their dependence upon the total social structure. Sociometric studies have shown that the surplus value is a special case of an universally operating tendency, the *sociodynamic effect*. "The distorted profit picture in economic relations is a reflection of the distorted tele picture on the interpersonal and intergroup level. The social revolution of the class struggle is therefore a displacement from the microscopic to the macroscopic level. Marx was operating on the gross macro-sociological level of events. Being unaware of the social microscopy of modern sociometry he committed a grave error of insight. The sociodynamic effect does not cease to be effective in a socialistic society, it assumes only different forms. It would be interesting to envision what effect this knowledge would have had upon his theory and method of social revolution. It appears at least that the place of revolutionary action should have been re-oriented towards the smallest units of human relations, the social atoms, the primary receptacles of "preferentiation", in order to become truly and permanently effective." (18). There the revolution might spontaneously have taken a more realistic form. Besides being economic it would have been at

the same time psychological, sociological, axiological and creative, in other words, it might have taken the form of a sociometric procedure.

Marx was halfway right in his second conclusion. The dictatorship of the proletariat cured society from the capitalist syndrome, reduced the risk of mass unemployment, put a brake on the prosperity-depression cycle typical for capitalistic societies. But the question is whether the revolution was indispensable and not too high a price for a comparatively meager outcome. The revolution was a major operation and had many unforeseeable and unfortunate effects upon the body politic. Less violent measures like state capitalism, labor-capital contracts and other forms of paternalistic governments appear able to provide temporary brakes against mass unemployment and the recurrent cycle of inflation and deflation. Both Marx and Lenin might have hesitated to stir up the masses to revolution, had they known in advance that it would end in a stalemate, barring instead of promoting—what after all was their objective—a truly human, classless and stateless socialistic world democracy. The question is therefore: How can we avoid the errors which Marx has made on the theoretical and on the practical level of revolutionary action?

We can avoid the theoretical error by replacing the theory of socialism with the theory of sociometry, and the practical error by replacing the global hit or miss socioeconomic proletarian revolution with "small" sociometric revolutions. This new view can be applied to a) the theory of social revolution; b) the instruments of revolution.

Theory of Social Revolution. Marx assumed that by means of a careful, materialistic analysis of human relations he had arrived at a full comprehension of what is wrong with human society, that it must be changed economically and that the change cannot take place by persuasion but by social revolution. His theory of practice was constructed in behalf of something to be prepared, something to be done, ending in one or several acts of mass violence. His attention was bent upon the dynamic change which he expected was bound to take place in the course of the violent upheaval of the masses and not upon the equally important aspect of its dynamic *failure*. He was not interested in the value of *defeat* of the socio-revolutionary experiment: he was not sufficiently interested to find out that the instrument itself, the socio-revolutionary program was *wrong*. All he was interested in comprehending—in the face of defeat (See "The Class Struggles in France")—was what was wrong with the situation to which the revolutionary idea was to be applied. *He did not permit himself to doubt the value and veracity of the social revolution itself.* The sociometrist, however much the idea to

change the world may burn in him, entertains a different point of view. What may be of little significance to the practical revolutionary Marxist is of the greatest importance to him—the sociometrist is interested in the social revolution as a "social experiment". It is to an extent immaterial to him whether it succeeds or fails. Because of our low grade of social knowledge, he is interested in it primarily as an exploratory experiment and not as a social crusade—in what one learns from it and not only whether society improves through it. What would we gain if by sheer luck and blind chance a violent revolution would so criminally and completely succeed, that human society would either be permanently crippled or permanently elevated? There is no guarantee that blind chance might not turn up again and reverse the effect. Perhaps it is better to know the truth although it may never be realized. It may be worthier for mankind to perish with seeing eyes than to live forever in ignorance of its deterioration.

There are similarities and differences between sociometric and socialistic types of change. Some of the similarities are: 1) both are in favor of direct action; 2) both are revolutionary, that is demanding a radical change of the existing social order; 3) both are against symptomatic and temporary measures; 4) both claim that a scientific knowledge of the dynamics of social relations is indispensable for a theory of social revolution; 5) both claim that all social ills, economic, psychological, axiological and cultural are interdependent; 6) both insist that the people act in their own behalf and that they are called to universal social action.

Some of the differences are: 1) a scientific knowledge of economics is important but insufficient for a true change of the social order; in addition to economics the dynamic structure of the socius, of inter-individual and inter-group relations has to be known and taken into account in the construction of a theory of social revolution; 2) socialism is the revolution of one class, the economic proletariat; sociometric revolution is a revolution of all classes, of total mankind, of all people, all individuals and all groups without exception, legal or illegal, formal or informal, small or large, of all nations and states, sovereign and unrecognized. The sociometric proletariat has its victims in all classes, rich or poor, black or white, among people of high or low intelligence, of superior or inferior spontaneity; 3) Marxism tries to fortify the class consciousness of the proletariat, to bring the masses to a realization of its power and of the actually existing economic conditions; political sociometry in contrast tries to develop in the masses a high degree of "sociometric consciousness", that is, knowledge of the structure of social groups in all parts of the globe, especially of the groups in which they hold

immediate membership and in respect to all criteria around which groups may be formed (the economic factor is only one vital criterion); it tries to encourage the masses to insist on change of the legal, social, political and cultural order as indicated by its underlying dynamic structure. It insists that economic revolutions are shortsighted, ignorant of the dynamics of the actual structure of human society and that sooner or later the new social order which they create will either relapse to the previous condition which they tried to change or regress into social anarchy.

The idea fixed prevails in many minds that before the next step in social revolution can be enacted, every country has to pass through the phase of the dictatorship of the proletariat; that the Russian Soviet type of revolution has to be established everywhere first before a new step can be undertaken. This is usually linked to the idea that the course of social revolutions from feudal to capitalist society, and from capitalist to soviet society is a necessary, irreversible development which could not have been stopped or directed towards an alternate course. But sociometrically there is no such thing as "class", capitalist class, middle class, and worker class. The concept of class is pre-sociometric mythology. What a sociometric study of such large masses of people as class might reveal is a real portion—a complex of microscopic islands of interpersonal and intergroup structures here and there, and a huge biased political organization tying the pieces together.

The greatest advance which sociometry has made as compared with Marxism are: a) its methods by which it can explore causes of social ills; its methods of *social microscopy*, an approach which the French sociologist, Georges Gurvitch, has emphasized independently; b) its linkage to the people in action. The first advance has been made in a spirit similar to the one developed by somatic medicine in the nineteenth century. In somatic medicine the cause of many mysterious ailments was finally found in germs, invisible creatures, in micro-organisms. The cure of many macroscopic manifestations and endemic diseases such as diphtheria, cholera, syphilis, etc., succeeded because of the new knowledge. The sociological medicine of the future, sociatry, will derive similar benefits from microscopically-oriented sociometric research, which tries to isolate the "social" micro-organisms in the social structure, facilitated by sociograms, sociomatrices, and interaction and movement diagrams. Remedies against social syndromes as the capitalistic syndrome, will be found along lines Marx never dreamed of, less violent and more permanent in their effects. Microsociology is, however, still in its infancy. I cannot agree with many of my friends that sociometry

has "come of age". It is far from it. Such easy optimism comes from the frequent practice to dilute and reduce sociometric tests to questionnaires and to reduce the status of the participants to be halfway between guinea pigs and people who choose and decide their destiny. It is here also where Marxism has been at fault. As protector of the interest of the masses, it has failed to protect the little isolated individuals, the little informal groups, and last but not least to mobilize the enormous underground networks between one group and the other. There are numerous forms of canalization between distant points in social space. They will be gradually discovered not in the laboratory but through experiments in life itself and as small sociometric revolutions spread all over the globe. The sociometric consciousness and maturity of the people will grow in proportion with the size of the experiments, the number and vitality of the criteria involved and the visible benefit derived from them.

The outcry of unfair exploitation, especially of economic exploitation of the majority of the people, the masses of industrial and rural workers, by a small minority of capitalists has been the well nigh irresistible core of all socialistic revolutions. Little or no attention has been given to the cruellest exploitation of all time practiced not only in capitalistic and communistic societies but by all historically known forms of government. It is the exploitation of the creators of ideas and the inventors of instruments. In their exploitation of this minority communistic and capitalistic societies are silently united into a single front. It is a proverbially and organically productive but powerless minority. In the manifesto of all socialist parties, landowners and industrial barons have frequently been called thieves and burglars, exploiters and consumers of the labour of the working class. As a matter of fact, they both, the consumers and the working class are exploiters and beneficiaries of the ideas, processes and instruments born of the helpless geniuses of all time. The creators, if any, are truly the most exploited minority in the world. They never had a political party, they do not start a revolution of their own to change the world order, they are changing it regardless of what kind of government exists at the time. They are comparatively few in number, they do not form a class, they do not belong to capital or to the proletariat or they may belong to either. They do not belong exclusively to one ethnic group or another, to one sex or another. The universality of their emergence seems to contradict the known laws of heredity, they are the most truly international people, the true *avant garde* of a world society. It should be clear from this that no world order can be structured from which these forgotten pariahs of all world revolutions

are left out. Indeed, it has to start with them as its foundation. A society of the world has to be like a wide open space in which every kind of people can settle and every kind of idea can find production. It should be of the greatest flexibility for the freest distribution of people and for the freest ascendance of values. It should be so designed that not a single individual—and not a single group—variety can be left out, that all men have an opportunity to produce a social order which can be called “a creatocracy.”

Techniques of Revolution. The term revolution is here used in reference to methods and instruments which attempt to produce changes of a major character in a given social order. The failure of the academic social sciences to develop instruments for change of their own, elemental methods of action which are able to operate “on the spot”, has had disastrous consequences in the political arena of our time. Socialism and communism—and with them many of their half breeds like fascism and nazism—have been superior and quicker to seize this opportunity. It is widely understood that mass meetings, political organizations of workers, labor unions, seizing the power and control of the armed and judiciary forces, of press and radio, and other acts of overthrowing governmental authority, are instruments of revolution.

Communists and fascists have a large repertory of dramatic, physical, spectacular, and super-Macchiavellian techniques of all sort. Being without action techniques, the fraternity of social scientists has been taken by surprise. Living in the midst of wars and revolutions for nearly half a century they had to look passively on and permit generals and politicians to change the world. They tried to argue when elemental measures were required. Intelligent reasoning and polite conference manners were ineffective against party slogans, invectives, laughter, shouting, vulgar jokes and swearing, lies and distortion of facts. They tried to fight action and surprise methods with lyrics and editorials. Before they had learned their lesson it was too late. When they awakened from the state of panic and paralyzed fear the game was taken out of their hands and the initial phase of the battle was lost. In other words, the *avant garde* of academic social science did not have social instruments of attack and counter attack available in a period of emergency. At last we sociometrists stepped in to the breach and developed “psychological and social shock methods” which may well become scientific instruments of social action, preventives or antidotes against the mass hypnotism and persuasion of purely political systems.

Sociometry has developed, among others, two instruments of change: a) the population test; and b) the sociodrama. The population test is an

instrument operating in situ; it brings the population to a collective self expression and to the transaction of its plans in respect to all fundamental activities in which it is, or is about to be involved. It is a flexible procedure which calls for immediate action and for the immediate application of all the choices and decisions made. The population may consist of residents of a village, manager and workers of a factory, etc. The sociodrama is an instrument by means of which social truth, truth about social structure and conflicts can be explored and social change transacted by means of dramatic methods. It may operate like a town meeting with the difference that only the individuals involved in a social issue are present and that decisions are made and actions are taken which are of basic importance to their own community. The productions and solutions in a sociodrama grow out of the group. The choice of the social issue and the decision of its implementation come from the group and not from a particular leader.

Sociodramatic workers have the task to organize preventive, didactic and therapeutic meetings in the community in which they live and work; to organize, upon call, such meetings in problem areas everywhere; to enter communities confronted with emergent or chronic social issues, to enter mass meetings of strikes, race riots, rallies of political parties, and so forth, and try to handle and clarify the situation on the spot. The sociodramatic agent moves into the group accompanied by a staff of auxiliary egos, if necessary with the same determination, boldness or ferocity as a fuehrer or union leader. The meeting may move into an action as shocking and enthusiastic as those of a political nature, with the difference that the politicians try to submit the masses to their political schemes, whereas the sociodramatist is trying to bring the masses to a maximum of group realization, group expression, and group analysis. The methods have opposite aims, the development of the meetings, therefore, takes a different form. The political drama starts from within the politician and his clique, it is pre-arranged and carefully calculated to arouse hostility or bias against a foe. The sociodrama however, starts from within the audience present, it is calculated to be educational, clarifying and energizing to all members.

Sociometric revolutions do not promise violent and rapid results. They dig deep and their success depends upon a new learning process applied to small groups. Similar to an infant, mankind will mature only step by step and to the degree to which sociometric consciousness will refashion our social institutions, the structural readiness of mankind for a world society will ripen. Many wars and social upheavals will torture its sick body. In this transition the doctor may be more important than the engineer.

In 1848 the masses of the proletariat in the industries and armies were of prime importance for production of goods as well as for making wars. In 1948 the situation has at least potentially changed. Another few decades and factories may be robot-ridden and run by one engineer or a single atom physicist.

Human society is ailing. A psychiatric empire is gradually emerging and spreading over the globe. Politicians and diplomats will move into second status. Social scientists, psychiatrists, sociatrists and sociometrically oriented socialists will move into first. The mentor in the White House, a future President of the United States may well be a psychiatrist before another century has passed. Is not the whole cosmos beginning more and more to look like a huge mental institution with God as its physician in charge?

Sociometric Theses

1. Human society has a structure of its own which is *not* identical with the social order or the form of government currently in power. Its structure is influenced but never entirely determined by the instrument in charge of its affairs, for instance the state. The state may "vanish" but the underlying sociodynamic structure of society persists in one form or another. It is into the structure of the socius therefore, that a revolutionary effort has to put its teeth if a lasting and true cure of social ills is to be effected.

2. Sociometry has developed two types of instruments, instruments for diagnosing social structures and instruments for changing them. The sociometric test, psychodrama, sociodrama and axiodrama among others can be used for diagnosis as well as for social revolution.

3. The oldest and most numerous proletariat of human society is the sociometric proletariat. It consists of all the people who suffer from one form of misery or other, psychological misery, social misery, economic misery, political misery, racial misery, religious misery. There are numerous individuals and groups whose volume of attractions, or role expansion, of spontaneity and productivity is far beneath their needs and their ability to consummate them. The world is full of isolated, rejected, rejecting, unreciprocated and neglected individuals and groups.

4. The sociometric proletariat cannot be "saved" by economic revolutions. It existed in primitive and precapitalistic society, it exists in democratic societies, and in socialist Russia.

5. Sociometry is the sociology of the people, by the people and for the people. It teaches that human society cannot be changed by indirect,

mechanical manipulation or by the arbiter of force. Whatever the type of government and social institutions coerced upon the people, whether they are cooperative communities, communistic, democratic, autocratic or anarchistic types of government, sooner or later they lose their hold upon the people. The people discard them, if they do not root in the productive will of the people and if they are not created with the full participation of every individual member.

6. In order to change the social world social experiments have to be so designed that they can produce change; in order to produce change the people themselves have to be included in its operation. You cannot change the world ex-post-facto, you must do it now and here, with and through the people. Marx had not the slightest intention of developing an experimental method for the social sciences but he has been the only pre-sociometric sociologist who came close to solving the problem. It is true that the social revolutions which he instigated ended in failure—in their major aims—but this does not contradict the fact that his revolutionary theory was the nearest to an experimental method in the social sciences before the advent of the sociometric method in our own time. How could governments and responsible statesmen ever take the work of social scientists seriously, considering the triviality of their findings and the aimlessness of their experimental designs. They took Marx, Engels, and Lenin seriously because they tried to change the world.

7. The dilemma of Marxism can be summed up in one phrase: its ignorance of the dynamic social structure of human society. It ascribes the deep resistance to change and revolution to the property owners, the capitalistic class. It is not aware that this deep resistance comes directly from the social structure and if the true cause for it simmers in the mind of some of the followers of Marx, they do not make an adequate effort to take it into account.

8. Sociometric investigations suggest the existence of residual social structures which are traceable to the following phenomena: a) an embryonic social structure which can already be noticed in subhuman societies; b) every social order, after it has had its reign, does not disappear entirely but leaves its mark upon the social structures which it has shaped. The cumulative effects of these "hangovers" plus the above-described embryonic development produce a total impact which explains the resistance against change.

9. The social experimenter cannot know all the factors entering the situation nor all the changes in these factors which may take place between

the time he considers the experiment up to the time he executes it, and he cannot know of new factors which may enter the situation in the course of the experiment itself. The sociometric experimenters escape this dilemma, they are the experimenter and the experimental subject in one. Even if they do not know of all the factors entering their situation it is inherent in their feelings, their actions and inter-actions and it must come out in their experimental designs and revolutionary transactions. It may be at times imperfect and unprecise but it is an experiment in vivo, consciously and systematically carried out by the whole group.

10. *Social nature has a sociometric character, that is why sociometry works.* The solution is to replace the experimental method of Bacon and Mill which was constructed to meet the requirements of physics, by an experimental method which is able to cross-examine the reality of social change. The idea of setting up a control group in the realm of social action is pregnant with artificiality and abnormality and bound to distort the results or make them trivial. Spontaneous control groups are possible, but never outside, only within a sociometric atmosphere. The replacement is accomplished by a process of reversal. Mankind itself, in a literal and concrete sense of the word becomes the experimenter and the former autocratic experimenter becomes one of its two billion co-thinking participants.

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SOCIOMETRIC ANALYSIS OF CLASS STATUS IN RURAL COSTA RICA—A PEASANT COMMUNITY COMPARED WITH AN HACIENDA COMMUNITY

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PEASANT AND FAMILY-SIZED FARM OPERATORS AND CLASS BEHAVIOR

The absence of peasant proprietors in substantial proportions in most of the countries of Latin America has resulted in the rural culture being characterized predominately by what some have called the "peon-patron" relationship.¹ Among the rural masses who, in many areas, live on the large haciendas there is a certain submissiveness resulting in a willingness to permit, without question, both church and lay dignitaries to determine individual action. There seems to exist a sort of potential peon-patron relationship in lay affairs and in other matters of the padre, or priest, and his council is accepted with less questioning than is the case in comparable situations in Anglo-American culture where the family-sized farm prevails. The apparent submissiveness is no doubt the heritage of feudal times coming from the cultural streams of the Spanish colonists and certain Indian cultures which were feudalistic or paternalistic in nature.

Throughout the world wherever there is a powerful middle class there is also, or has been, a strong peasant proprietor class whose offspring have furnished many migrants for the expanding industries of the cities and who, because they are both laborers and capitalists, furnish a stabilizing element in the general society. In rural society generally where the family farm is the prevailing unit, differences in socio-economic status are less than elsewhere and community solidarity is a noteworthy characteristic. The family farm offers recognized advantages in the development of personality and of individual initiative and responsibility. In the peasant proprietor type of community most people perform some tasks requiring manual labor and there generally exists a high respect for workers and the

¹ Kluckhohn, Florence, "Los Ataruenos, A Study of Patterns and Configurations in a New Mexico Village," (unpublished dissertation, Radcliffe College, Cambridge, Mass., 1941). Here this trait is characterized as the "Patron Configuration." See also Loomis, C. P. and Grisham, G. "The New Mexican Experiment in Village Rehabilitation," *Applied Anthropology*, June, 1943. See also Loomis, C. P. "Extension Work in Latin America," in Brunner, Ed. des, et. al., *Farmers of the World—The Development of Agricultural Extension*, Columbia University Press, New York, 1945, Ch. 9.

dignity of labor. A high value is placed upon the ownership of property and the role of those who must manage others and assume risk is understood and appreciated. The family farming unit has also been found to be more efficient in the production of food and fiber. Not only is this true, but family farming areas have higher birth rates than comparable areas of large scale operations. Thus the family farm excels in the production of food and fiber and the human material from which society is made.²

In the United States farmers and ranchers on the family-sized operations usually side with management on public opinion survey questions related to strikes, unions, wages and socialization of industry.³ Nevertheless, when farmers were put the following question as reported in the April 1943 issue of *Fortune*, "suppose in five of six years it became clear that Congress was going to be dominated either by labor or by big business interests, and farmers couldn't do anything about it except throw their support one way or the other, which would you want farmers to support?" Results were different. The side of labor was chosen by 45.2 per cent and big business, 24.5 with 30.3 answering that they did not know. Both Rice and Bean found that rural north central and great plains states where the family-sized farm prevails were more "insurgent" and "progressive" than others and that increasing industrialization was related to more "inflexible" voting behavior. American Farmers have frequently sided with labor in third party movements.⁴ But as indicated above, they also side with management when they think the demands of labor are extreme. The residents of family-sized farming communities constitute a balance wheel in society. They are neither completely lower class in their sentiments and value orientation—neither are they completely upper class.⁵

² Akerman, J. and Harris, M., *Family Farm Policy*, op. cit., pp. 396-399. For a comparison of efficiency of production see Loomis, C. P. *Studies of Rural Social Organization*, pp. 10 ff.

³ See for instance the polls reported in *The Public Opinion Quarterly* as follows: Winter 1948-49, p. 763, Fall 1947 p. 482, and p. 498, Summer 1947 pp. 289, 296, 311, and Spring 1947 p. 171. See *Successful Farming*, December 1945.

⁴ Rice, Stuart A., *Farmer and Workers in American Politics*. New York: Columbia University, Doctoral Dissertation: 1924; and Bean, Louis H. "Ballot Behavior", *A Study of Presidential Elections*. Washington, D. C.: American Council on Public Affairs: 1940.

⁵ In period of the rise of Hitler in Germany the present proprietors tended to side with the Nazis and the laborers of the estates in the areas of large holdings with the Social Democrats and Communists. See Loomis, C. P. and Beegle, J. A., "The

COSTA RICA, THE HOME OF THE PEASANT PROPRIETOR

Although small holders may not be as strong economically and politically as formerly in Costa Rica, this small country is generally considered as a country of "peasant proprietors." The Biesanz⁶ report concerning the thinking of the Costarricense about the relative political stability of his country and its democracy as follows: "One of the chief reasons we have democracy is that almost everyone in our country is a landowner or property holder." The Biesanz⁷ report also states that in 1938, 71.7 per cent of the heads of families were listed as proprietors, and that of 318,549 registered fincas or forms. Thirty-seven per cent were not taxed because they were worth less than \$535. In the areas in which coffee is the chief export product constituting 49 per cent of the total value of exports in 1941, there are many large holdings and the peasant proprietors are often losing their equity in their land and becoming peons.⁸ Nevertheless, it is reported that 56 per cent of the coffee planters own less than one manzana or 1.7 acres and another 20 per cent have less than two manzanas. The small owners usually work for the big hacienda owners, but no study of the class structure of Costa Rica can ignore the peasant proprietor who throughout the world is a strong element of support to the middle class. According to Biesanz⁹ "In the country village, the community leaders—the priest, school teachers, political chief, and the well-to-do peasant, or *gamonel*, whose favor is sought by the city politicians—are the most respected and influential people." Although the upper classes of the city may refer contemptuously to the well-to-do peasant "Conservative, religious, and hard-working, he cares little about the ostentations and modern ideals of the city social set, but his children often attain them through the education and friendships which money makes possible."¹⁰ Thus we may say that Costa Rica like the United States has an open class system in which the small rural proprietor plays an important role. Most of the great hacienda owners came originally

Spread of German Nazism in Rural Areas," *American Sociological Review*, Vol. XI, No. 6, Dec. 1946, pp. 724 ff.

⁶ Biesanz, John and Mavis, *Costa Rican Life*. Columbia University Press, New York, 1944, p. 150.

⁷ Ibid. p. 150.

⁸ Ibid. p. 131.

⁹ Ibid. p. 21 and 22.

¹⁰ Ibid. p. 22.

from this class. As Preston James¹¹ writes "Costa Rica is one of the most thoroughly democratic states of the Western Hemisphere," and this fact is in no small part to be explained by the relatively strong position of the peasant proprietors.

WHY THE PRESENT STUDY?¹²

Inasmuch as the two communities appearing in Figures 1 and 2 are representative of the peasant and hacienda communities found in Costa Rica and throughout much of Latin America, the authors believe a comparative analysis of the social organization and of the social class structure as it is exhibited here is of considerable importance because of the role each plays in democratic societies.

Costa Rica, long considered as the country of the "peasant proprietors," now appears to be in a stage of transition in which peasant holdings are being gradually throttled by the large fincas and corporations thus reducing the status of the people from that of peasantry to peonage.¹³ Increasingly larger numbers of people are becoming "jornaleros" and working for a subsistence wage as peons for the large land owners. What, then, might be expected if the country continues in the present trend toward a peon-patron type of system. For example, is there really a larger lower class on the hacienda than in the peasant community? How do the classes in these two situations compare with those in society at large? Especially important is the influence this transmutation may have upon the possible acceptance of communism by the rural people who have been and are being forced to accept the status of peonage.

¹¹ *Latin America*, The Odyssey Press, New York, 1942, p. 706.

¹² The authors are indebted to Ralph Allee, Director of the Inter-American Institute of Agricultural Sciences, and Julio Morales, Head of the Department of Economics and Rural Welfare of the Institute for use of facilities of the Institute in making the study. However, neither official should be held responsible for the results reported. These are the sole responsibility of the authors. The intensive study of the two communities was made by the junior author while off-duty from the obligations of the cooperative arrangement between Michigan State College and the Inter-American Institute of Agricultural Sciences. Nevertheless, the assistance and council and advice of Drs. Allee and Morales are deeply appreciated. A larger joint study conducted cooperatively by Michigan State College and the Institute is in process.

¹³ Biesanz, John and Mavis, *Costa Rican Life*. Columbia University Press, New York, 1944, pp. 150-152.

SOCIOMETRIC METHODS EMPLOYED

Before choosing these two communities for comparison, the junior author spent a great deal of time visiting, observing, and studying many settlements throughout the region in order to make the selection as representative as possible. After this decision was reached, he mingled freely among the people in the two communities as a participant observer, established excellent rapport, and interviewed each family and numerous key informants many times. After a year's acquaintanceship he could have described the class structure from his own knowledge, but since both authors were interested in objective and operational methods which might be used elsewhere in describing the class structure, he employed special sociometric and rating techniques to reveal the class structure in the two communities—one on an hacienda, and the other composed of peasant proprietors. First, the interaction patterns were studied carefully and plotted so that the cliques or friendship groups and their leaders were revealed.

Each family head was requested to help in designating the prestige leaders. This was accomplished by asking each informant the following: "What three persons would you choose to represent you and the people of this area on a commission?" Upon completion of this request, the informant was asked, "Which of these three would you select as your first choice, second choice, and third choice?" With these data we were able to compare the clique and prestige leaders in the communities. With the acquisition of these and a quantity of other pertinent data, the junior author from his knowledge of the people selected as nearly as possible an equal number of competent judges from each of the social classes existent in the respective communities.

A total of ten judges were ferreted out of each community and they, separately and privately, were given a set of filing cards covering their community, each card bearing the name of one "jefe" or head of a family and his wife—the judge's own name and family included. Upon occasions the judge's wife or husband was also present and at such times the resultant rating was usually the summation of their combined judgments. In these cases the names of both individuals were placed on their rating sheet. After preliminary explanation of what was desired and with the cards in hand each judge was asked to sift through and sort them into groups according to the social class he believed each family should go. The judges were all asked to repeat the procedure to insure the proper place-

ment of every family. After each informant had classified the people of his community into what he considered the proper class, and had also identified himself in the classification, the ratings were placed on his rating sheet containing the complete list of names appearing on the cards.

It is significant to note that in the Hacienda community, of the ten judges, eight placed themselves in the same social class in which they were placed by the majority of the other judges. With reference to the other two, one judge, a clique leader, rated himself as belonging in the 2nd class (upper-lower). In this instance the family is actually upward mobile as is indicated by the fact that three of the judges besides himself placed him in this group while the other six ranked him in the first group (lower-lower). The other case in question is rather singular in that five judges placed him in class three (lower-middle), four judges (including himself) placed him in class four (upper-middle) while the tenth judge placed him in class 4-B with the explanation that the marriage was unequal. The woman, a relative of the finca owner, belonged definitely in the fourth class, but her husband, according to this judge, was distinctly of the third class, and because of this he could never consider them as being quite equal to the finca owner and family.

In the peasant proprietor community, nine of the ten judges placed themselves in the same class into which they were placed by the majority of the judges. The tenth judge, No. 41 on Figure 1 a major clique leader, placed himself in the third class (lower-middle) while the other nine judges placed his and his family into the second class (upper-lower).

Of interest and importance is the fact that the judges were in remarkable agreement as to the number of classes existing in each community.

The ratings of the judges are graphically shown in Figures 1 and 2, As indicated in the legend, those families who were designated by all ten judges of a community to be lower class are solid black. The degree to which any family circle is filled in with a specific class marking represents the proportion of the judges placing the family within that particular social class. Thus number 60 appearing in Figure 1 was placed by six judges in the lower-lower class and by four judges in the upper-lower class. Number 38 in the same figure was placed in the lower-middle class by eight judges and in the upper-lower class by two judges.

Figure 2 describes the relationship between the classes of the two communities as related to the Warner class system. It will be noted that there

are no upper-class families in either of these communities. Actually in Costa Rica, the upper-upper and lower-upper classes are represented in only the major cities.

Before proceeding further with the analysis of the data from the two communities, however, the reader will no doubt be interested in their description.

SAN JUAN SUR—A PEASANT FAMILY-SIZED FARMING COMMUNITY

Stretching out over sloping, heavily vegetated mountainous terrain for a distance in length of five kilometers and a width of two kilometers, lies the village of San Juan Sur. Located in the central district of the Canton of Turrialba in the Province of Cartago at an estimated altitude of between 900 to 1,100 meters above sea level, San Juan Sur is a line-type settlement composed of small land-owner farmers who have established themselves along the mountain trails. Only a minor centralization of families exists in the approximate geographical center of the area in which the school, general store, and cantina are located.

San Juan Sur joins the San Jose-Turrialba highway by a dirt cart road which is traveled by foot, horse, and oxen cart, and becomes extremely difficult for the carts during the rainy season of the year. Connections from San Juan Sur to Pavas, Florencia, San Juan Norte, and Aragon similarly are by jungle trails.

All farm commodities are transported to trade centers by oxen cart, on horseback, or by the able members of the family. It is a common sight on Saturday and Sunday mornings to see the people, especially the women and children, carrying eggs, chickens, and other produce down to Turrialba to sell or barter. Many who go on Sunday attend their church services as well.

Seventy-five families or an adjudged four hundred and fifty persons constitute the total population of the community. Of these families the major portion are small farmers, a number of whom hire out part time as peons for salaries in order to augment their incomes. With few exceptions the people are of Spanish descent and of the Catholic religion. The Evangelist church is the only other religion existent among the people and this lays claim to only a few.

Houses in San Juan fall into two basic categories—"casa" and "rancho." Approximately two-thirds of the families live in casas and one-third in ranchos. The casa may be described in general as having a sheet metal roof, walls and floors constructed of wide rough wooden planks. The glassless windows have wooden shutters that can be closed at night and during stormy

weather. Inside there is usually a living room, bedroom, and kitchen. All three rooms are on an average small and rudely furnished. The rancho usually has a thatched roof made of sugar cane leaves, walls of tree branches stripped of outer bark and only hard-packed earth as a floor. Inside, there is usually a partition which divides the small area into two rooms. The open door and cracks in the walls are the main sources of light for many ranchos while others may have small windows with crudely constructed shutters.

Community services are limited to one schoolhouse in which children are instructed through grades one, two and three; a cantina, which supplies drinks for the thirsty with breads and cookies as a sideline; and a general store which carries a limited line filling many of the needs of the people.

As "officials" of the community, there are the three local school board members, teacher, an auxiliary policeman, the religious "selvador" charged with the responsibility of the community saint and seeing to it that it is passed among those of Catholic faith, the "mayordomo" of the local cemetery, and the mailman who makes delivery twice a week.

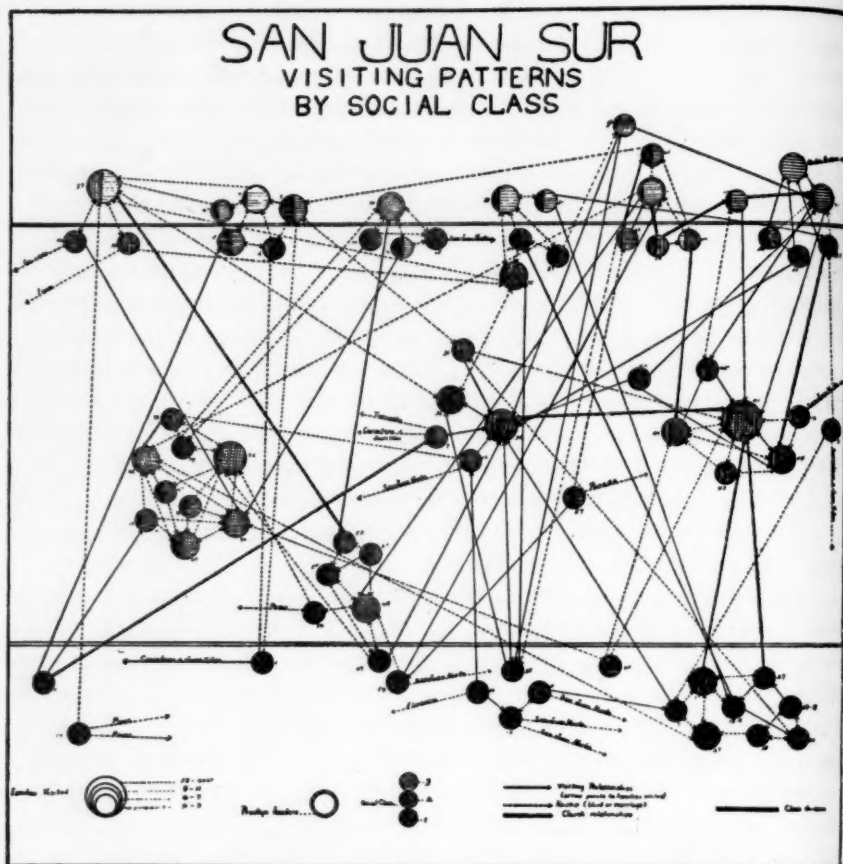
Though the major crop is coffee, sugar cane and truck gardening are also important sources of revenue.

Of the entire community only one family had lived there less than a year at the time of schedule administration. The families have proved to be stable and more or less permanent. Their major problems include an ever losing battle with ants in the raising of crops, difficult and treacherous roads, the need of a sanitary water system free from the constant threat of intestinal parasites (all water at present is carried from mountain streams), a need of electricity, and a very great need of health facilities. The only medical assistance they have available is in Turrialba and this is at such distance over difficult country and so limited that it is of comparative minor importance.

The major social diversions of the people are found in visiting and chatting. The young people also find recreation in playing the latin type of football in the plaza.

GENERAL INTERPRETATION OF FIGURE 1

An analysis of Figure 1 reveals that in San Juan Sur, the major part of the informal visiting is between relatives—conjugal and consanguinal. While friendship visiting outnumbers that of "compadres" (church relatives), the compadre relationships are nevertheless of significance. Of the 225 visits graphically depicted, only 19 or 8.4 per cent are oriented outward, indicating a homogeneous, well integrated social system. Only one family, 1.3



per cent of the population, has lived there less than a year. The majority of the people are long-time residents of the community. There could be considerable visiting over the mountain in San Juan Norte, or down the mountain in Turrialba since the distance to San Juan Norte is just two kilometers and the people frequently go to Turrialba on business, a distance of five kilometers; but there is not very much visiting in either place.

As the figure illustrates, the community is composed of 12 cliques. Three of the top 4 clique leaders fall into class 2 with one falling into class 3. Four of the top 5 prestige leaders are found in class 3 with one in class 2. The top clique leader, No. 41, is visited by 14 families and the top prestige

leader, No. 66, received 54 first choices and a total of 59 choices out of a possible 75.

Of the 75 families in the community, 44 or 58.7 per cent fall into class 2 while 18 or 24.0 per cent are in the lower group and 13 or 16.7 per cent are found in class 3. As indicated by the social class markings in the family circles, there is a considerable degree of mobility in the community between classes. Of the 18 families in class one, only 2 are solidly within the class, although 9 of the others show very little upward mobility (8 judges or more placing them within the group). In the second class, every family presents at least some degree of mobility while in class three, 3 of the 13 families are solidly within the group and 6 are nearly so (8 judges or more placing them within the group).

ATIRRO—AN HACIENDA-TYPE FARMING COMMUNITY

Lying in the heart of a 4,500 acre Hacienda, situated on the foothills of a mountain, and bounded on its lower side by a river, Atirro displays a European pattern of village settlement with the houses closely grouped together in an area adjudged to be two and a half blocks square. The land, on an estimated elevation of 550 to 600 meters above sea level, is damp with numerous small streams seeping through at varying points throughout the community; and the houses are adjoined by a network of footpaths.

The village lies within the Canton of Turrialba in the Province of Cartago just beyond the boundary of the central district. It is operated by and, with the exception of the people themselves, belongs entirely to the Hacienda, including the road leading to the outside. A dirt road connects Atirro to the Turrialba-La Suiza highway and is passable for automobiles at all times of the year. Trails lead from Atirro to Omega and Pejivalle.

Walking is the major means of transportation, and on Sunday mornings, many of the villagers can be seen on their way to Turrialba and La Suiza to purchase needed supplies, attend Sunday Mass, and to "paseo."

Sixty families or an approximate three hundred persons populate the community. They are chiefly of Spanish descent and unanimously Catholic. The people are all employees of the finca and work for a small daily wage. In addition to this they are furnished with rent-free housing during their working period on the finca. Considerable mobility is evident and illustrated by the fact that sixteen of the sixty families in the community at the time of schedule administration had lived there less than a year.

Houses in Atirro are all of the general specifications attributed to the "casa" having sheet metal roofs, walls, and floors of wooden planking,

window openings protected by wooden shutters and three small rooms—living room, kitchen, and bedroom. Typical of all the houses occupied by those in the lower income bracket, no chimney is provided and smoke from the fire over which the cooking is done fills the room and finds its own exit among the rafters of the house. All the houses in Atirro have running water and electric light installations. Along with these conveniences, the village has a number of communal "pilas" where the women gather to scrub their children, dishes, and clothing.

Community services, though limited, furnish major needs and include the following: A large commissary in which is sold a great many miscellaneous items among which are medicines, food, and hardware, etc.; a butcher shop which opens on Saturdays; a small health dispensary which is used twice a month by the social security doctor who spends only a brief hour and a half hurriedly prescribing for the sick; a combination school and chapel in which grades one, two, three, and four are taught, and Mass is held once a year on the day of the patron saint of Atirro; and a small jail which is rarely used for anyone except inebriates.

The top "official" of the community is, of course, the finca owner. Next in line of authority is the administrator who directs the work of the finca. A "mandador" is selected for the responsibility of directing the workers. Although the "mandador" is responsible to the administrator, he is also answerable to the Finca owner. One of the peons of the village is appointed by the Jefe Politico in Turrialba as an auxiliary policeman, and in this capacity he receives slight remuneration from the Government. One of the two school teachers also performs the function of a nurse in helping the sick and dispensing medicines.

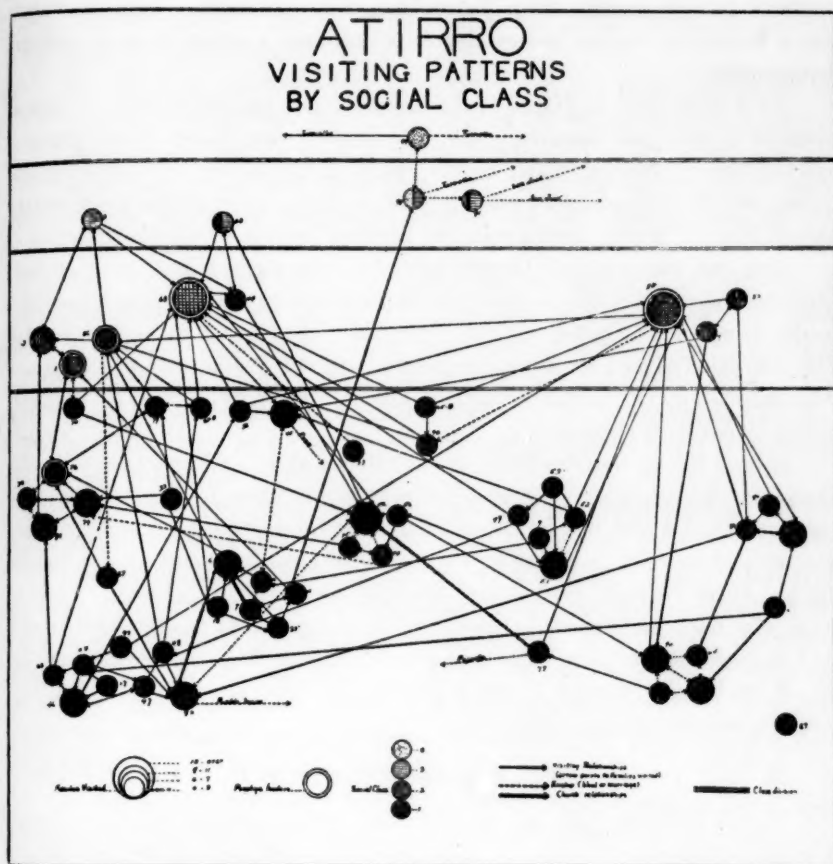
Major crops of the finca are coffee and sugar cane; and cattle raising is becoming increasingly important as a source of revenue.

The most vital problems of the community are malnutrition and the constant presence of sickness and death.

Recreation and pleasure are found in social contact. The women visit at the pilas while working, the men loaf and chat at the commissary in the afternoons, and the younger people play the latin form of football in the plaza. There is a great amount of informal family visiting during holidays, on Sundays, and in the evenings.

GENERAL INTERPRETATION OF FIGURE 2

An analysis of Figure 2 reveals that in Atirro by far the major portion of the informal visiting is between friends. There is comparatively little



visiting between relatives and compadres. This is explainable in part by the fact that there is considerable mobility in and out of the village with 16 or 26.7 per cent of the families having lived there less than one year at the time of schedule administration; consequently, there is no large body of related families either conjugal or consanguinal nor many compadre relationships.

Of the 174 visits graphically depicted, only 8 or 4.6 per cent are oriented outward indicating a significant degree of homogeneity and integration within the social system. In the case of Atirro, however, the factor of isolation must be taken into consideration. It is set deep in the heart of the finca at a dis-

tance of 14.0 kilometers from Turrialba and 8.4 kilometers from La Suiza which presents a barrier to any degree of informal visiting in these outside communities.

As is illustrated in Figure 2, the community is aggregated into 8 cliques oriented around and composing the two major polar bodies whose centers are numbers 68 and 88. There is also one small clique composed of the finca owner, No. 99, commissary owner, No. 98, and the father of the commissary owner, No. 41, whose associations are directed outside of the community.

The two major clique leaders both fall into class 2 and are also top prestige leaders. No. 68 is visited by 14 different families and as a prestige leader received 32 choices out of a possible 60. No. 88 is visited by 12 different families and as a prestige leader received 29 choices out of a possible 60. Of the 5 prestige leaders, 4 are in class 2 and one, also a small clique leader is in class one.

Out of the 60 families living in the village, 47 or 78.3 per cent fall into class one (lower-lower), 8 or 13.3 per cent are in class 2, 4 or 6.7 per cent comprise class 3 and one or 1.7 per cent (the finca owner) occupies class 4 (upper middle). As is indicated by the social class markings in the family circles, there is very little social mobility between the classes. This is especially true of class one in which 35 or 74.5 per cent of the families are unanimously of one class, and class 4 in which the finca owner was put by all of the judges. Classes 2 and 3 exhibit the greatest amount of mobility existent within the community.

SUMMARY AND CONCLUSIONS

In San Juan Sur, the peasant proprietor type of community, there exists a large middle group (class 2) comprising 58.7 per cent of the families, a smaller body (class 3) comprising 16.7 per cent of the families, which in terms of the national class structure could be called the lower middle class, and a relatively small number in class 1 (lower lower) composed of 24.0 per cent of the families.

Four of the five prestige leaders were ranked in the highest class (lower middle) in the community, and it is this group and their associates who may eventually climb into the upper classes.

Owners of property, believers in thrift and hard work, neither of the two top classes (upper lower, and lower middle in the national society) are apt to be interested in communistic doctrines.

The prestige and friendship group leaders tend to be more diffused throughout the community than in the large hacienda village. According to

West, one family-sized farming community in the United States has more or less the same three classes.¹⁴

In Atirro, the hacienda type community, the two upper classes are removed in orientation from the other people in the village, and their associations are directed largely outside the community. The top prestige leaders of Atirro were not chosen from these two upper groups and there exists a barrier of significant proportion between the two lower groups and the two upper groups.

High mobility and lack of differentiation of function and initiative on the part of the laborers has led to a situation in which friendship group leaders and prestige leaders are the same in the community, particularly so in the class (class 2) from which the masses take their orientation. These leaders having a minimum of worldly possessions, but considerable ability to handle people, may be potential cells for communistic or other movements, especially in times of crisis.

The lack of informal communication between these leaders and the finca and commissary directors in the classes above is noteworthy.

This study demonstrates by the use of operational methods in determining class structure, that in the peasant proprietor type community, the middle and upper groups are closely interrelated by informal interaction. Particularly important are the large number of kinship relations tying the friendship groups together. Other close ties such as godmother, godfather and other "compadre" relations play a subordinate but nevertheless significant role in strengthening the friendship group ties.

In the more mobile hacienda community, the most important and largest of the clique and prestige leaders are in the propertyless artisan class who are but once removed from the unskilled hand workers (jornaleros). It is of interest to note that not one of those found in this artisan group (class 2) is an ordinary hand worker of the finca. These workers function as carpenters, "mozo" or man in charge of cattle, "mandador" of the coffee beneficio, etc.

The middle class philosophy of thrift, hard work, and high regard for property is not as prevalent in the hacienda community as in the peasant proprietor community.

¹⁴ West, James, *Plainville, U. S. A.*, Columbia University Press, New York, 1945, p. 136. West's three classes were called "upper class," "good lower class people," and "lower element." He equated these to W. Lloyd Warner's class in Yankeetown respectively as follows: Lower middle, upper lower, and lower lower classes. The three classes in San Juan Sur were most frequently called "los primeros," "los regulares," or "el grupo mediano," and "los bajitos."

ATTRACTION PATTERNS IN A UNIVERSITY¹

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In a recent paper regarding attraction patterns in a small college² we refer to a comparable study underway in a large university. The latter project, reported below, was designed to test the generality of the findings in the former study, and also to inquire into the further question as to whether *repulsion* patterns show the same in-group and out-group characteristics as do attraction patterns.

(a) Method.

The students in four women's residence halls were asked to fill out the following questionnaire:

A. List in order the first, second, and third choice of *persons now living in this house*, whom you would like to have for roommate next year if you were to live in this house.

B. List in order the three persons *now living in this house* whom you least desire for roommate next year if you were to live in this house.

C. List in order the first, second, and third choice of *women students now in the University* whom you would like to have for roommate next year if you were to live in this house.

D. List in order the three *women students now in the University* whom you least desire for roommate next year if you were to live in this house.

E. If, after leaving college, you could keep in touch with only three students, (men or women) now in college, which three would you choose?

The question "Why?" was inserted after each blank asking for a name. The answers to other questions were analyzed according to the same methods employed in the college study.

(b) The data and analysis.

We shall first consider the answers to questions B and E. Question E

¹ The authors are under obligation to Dr. Ruth Inglis for valuable assistance in the early stages of this study.

² "Consciousness of Kind' in a College Population," *SOCIOMETRY* 11:59-74, Feb.-May 1948. The tables in the present study are numbered consecutively from the previous study, which also contains a full explanation of the index here used.

is identical with that used in the college study³ and the comparable results are shown in Tables IX, X, XI, XII. The university results confirm the findings of the college study, although the indices in the university study are smaller and less conclusive. Two possible explanations of these differences suggest themselves. In the first place, the university group is very much less closely organized and associated than students in a small college. In the second place, the less pronounced in-group choices of the university group may be due to errors resulting from defective sampling. The schedule was distributed at general house meetings, at which the purpose was stated and necessary explanations of the study were made by a member of the staff. Students absent from these meetings received a questionnaire in their mail boxes together with a letter requesting cooperation. One-hundred thirty-one schedules (out of 496) or 26.41% were secured from this first request. A follow-up brought the total up to 230, or 46.37% of the whole population of the residence halls included. The failure to secure a larger response was largely due to certain conditions which will be described below. The representativeness of the sample remains open to question.⁴ As in all collections of data consisting of only partial returns from a questionnaire, the crucial question is this: How different would have been the responses of the group which did not answer? Two sharply opposed hypotheses may be formulated regarding the present inquiry.

(a) On the one hand, it may be hypothesized that people *who refuse* to answer an inquiry of this kind (those who resent it, are indifferent, etc.) are likely to be more independent also in their choices of friends, with the result that their answers would probably show *less* in-group tendencies than the answers of the group here reported upon. If so, the inclusion of those who failed to reply would, of course, reduce the size of the indices reported for the sample obtained and here reported upon.

(b) On the other hand, it may be hypothesized that the group *which did answer* the questionnaire are the less inhibited on the questions of the kind used in this study ("I-choose-whom-I-like-and-don't-care-who-knows-it.") and therefore were less likely to make in-group choices than the group which failed to reply. If so, the indices here reported would be higher if the answers of the non-answering group had been included. The higher indices secured in the college study, which included the whole student

³ *Ibid.*

⁴ A comparison of the proportion of freshmen, sophomores, juniors, and seniors in our sample with the distribution by classes in the whole university showed that in no case did the sample vary by more than 7% from the whole population.

body, might suggest the validity of the latter hypothesis, although only a direct check on the whole university group could conclusively answer the question.

It is possible of course that neither of these differences between the two groups exist, and that *no* significant difference exists. This remains a question for further study.

Question B and D were designed to get at the inverse of the data of Question A and E. That is, the characteristics of persons *disliked* were sought. Are the persons *disliked* also drawn disproportionately from the chooser's in-group, e.g., from the same college class, and major subject of interest, etc.? These results bear further on the question as to whether propinquity is the overall influential factor in accounting for both positive and negative choices.

Tables XIII, XIV, and XV are somewhat inconclusive on the question of in-group rejection. Table XIII shows that only in the cases of the Freshman and Senior (and Graduate) classes in the University do students tend to choose (more frequently than chance) persons they dislike as well as persons they like from their respective in-groups, (Last Column Table XIII). The rejection indices also are of somewhat comparable size to the preference indices (Table IX), except for the strikingly high index of in-group preference on the part of seniors (9.28) in the university relative to freshmen.⁵ In the cases of sophomores and juniors, the indices indicate that the tendency is to choose friends from their respective in-groups but persons disliked from out-groups so far as college classes are concerned. Table XIV shows this to be the case also for choices among majors, except in the case of literature majors who choose persons liked and persons disliked from their own in-group rather than from out-groups, with considerably greater frequency than chance would dictate (1.97 in-group preference and 2.96 in-group rejection).

⁵ Seniors nevertheless show a small positive index (1.40) of in-group rejection as regards freshmen which appears at first glance to be a contradiction under the usual interpretation of all indices over 1.00 indicating (in this case) a slight tendency on the part of seniors to choose persons disliked more frequently from their own group than from the freshmen group while at the same time (Table IX) choosing friends from their own group very much more frequently than from among freshmen. The two indices are not necessarily contradictory if we remember that the indices are based on *frequency of choices* among the senior group and are therefore subject to erratic fluctuations due to the small number of cases in some of the cells in a sample of the size here presented. For example, in the present case only 28 seniors were included. They gave only 5 choices to freshmen as desired roommates (Table IX) and 20 to freshmen as "least desired" to room with (Table XIII).

TABLE IX
DISTRIBUTION OF CHOICES AND INDICES OF IN-GROUP PREFERENCE AMONG UNIVERSITY CLASSES

Class	No.		Choices Given to: (Specific Indices)						General Total Indices
			Freshman	Sophomore	Junior	Senior	Graduate	Total	
Freshman	59	68		51 1.46	18 2.37	13 2.49	17 1.56	167	1.81
Sophomore	65	34 1.70		64	39 .937	24 1.14	17 1.33	178	1.28
Junior	37	17 3.09		28 2.05	33	16 1.56	18 1.14	112	2.03
Senior	28	5 9.28		17 3.00	19 1.52	22	14 1.29	77	2.73
Graduate	23	8 7.06		4 15.58	12 2.94	14 1.91	22	60	4.98
Total	212	132		164	121	89	88	594	

Chi-square = 112.626. Critical value at the .01 level = 32.000.

TABLE X
DISTRIBUTION OF CHOICES AND INDICES OF IN-GROUP PREFERENCE AMONG UNIVERSITY MAJORS

Major	No.		Choices Given to: (Specific Indices)						General Total Indices
			S	S	S	A	L	P-m & GS	
Social									
Science	60	59		44 1.30	23 1.67	26 1.05	20 1.32	172	1.34
Science	58	32 2.22		69	15 3.10	21 1.58	22 1.46	159	2.07
Art	39	27 1.81		15 3.16	32	14 1.64	17 1.30	105	2.00
Literature	28	18 2.02		14 2.51	11 2.14	17	16 1.02	76	1.97
Gen. Stud. & Pre-major	27	15 2.51		18 2.03	14 1.74	10 1.76	17	74	2.10
Total	212	151		160	95	88	92	586	

Chi-square = 58.272. Critical value at the .01 level = 32.000.

TABLE XI
DISTRIBUTION OF CHOICES AND INDICES OF IN-GROUP PREFERENCE AMONG APTITUDE PERCENTILE GROUPS (UNIV.)

Group	No.	Choices Given to: (Specific Indices)				High	Total	General Indices	
		Low	Average						
Low(1-3.29)	43	19		49	.585	42	.844	110	.740
Average (3.30-659)	65	34	1.02	53		65	1.05	152	1.06
High (6.60-9.99)	84	41	1.23	52	1.47	99		192	1.38
Total	192	94		154		206		454	

Chi-square = 10.202, this value being significant at the .05 level.

The indices of in-group preference and in-group rejection as between different aptitude groups (Tables XI and XV) are too small and inconclusive to warrant any conclusion except that the criterion, as measured by the tests here employed, appears to be a matter of indifference in the choos-

ing either of persons liked or disliked.⁶ Smucker (p. 124) reports, however, that "the level of intelligence and the degree of introversion-extroversion proved to be important factors in friendship resemblance, with approximately one-third of all friendship choices at about the same scores in the tests used for the measurement of those factors."⁷

The University sample, it will be noted, permitted in Question E the choosing of men anywhere in the University, as well as of women in the residence halls. The results show that the women in the residence halls made (a) 391 or 61% of their choices of other women in their own houses, (b) 140 or 22% of other women outside of their own dormitory, i.e., from

TABLE XII
DISTRIBUTION OF CHOICES AND GENERAL INDICES OF IN-GROUP PREFERENCE BY
RESIDENCE HALLS

Hall	No.	Choices Given to:			Total	6 General Indices*
		Own Hall	Other Hall	Outside Hall		
Austin	39	51	4	55	110	4.36
Blaine	60	110	3	62	175	4.87
Leary	88	162	10	67	239	3.43
McKee	43	68	8	44	120	5.80
Total	230	391	25	228	644	

Chi-square = 21.348. Critical value at the .01 level = 16.812.

*Based on a combination of the figures in Columns 3 and 4.

⁶ The aptitude scores were obtained from two tests, The American Council on Education Psychological Examination for College Freshmen and a local College Aptitude Test. The latter test which produces a reading-vocabulary score was used by the university until summer, 1946, when it was replaced by the ACE Test which produces a quantitative, linguistic, total score. The average of the reading plus vocabulary score was considered comparable to the linguistic score by the testing bureau of the university.

⁷ In the absence of any data as to what proportion of the population studied falls in each intelligence level, it is not possible to tell whether the proportion of persons choosing others of approximately the same intelligence-level as reported by Smucker (33%) represents a proportion greater than would occur by chance. Accordingly, we do not find Table 15 (p. 190) of Smucker's dissertation: O. C. Smucker, *A Sociographic Study of Friendship Patterns on a College Campus* (Unpublished Ph. D. Thesis, Ohio State University, 1946.) or his conclusions from this table convincing on this point.

The same is true of Table 14 (p. 184) of Smucker's dissertation. That is, it is not possible to draw the conclusions he draws from the data given. For example, he finds that 11% of single choices are of people from the same state. Whether this represents a number greater or less than chance could be shown only if the number of choices are considered in relation to the number of students from that state.

other halls and from the University as a whole, and (c) 113 or 17% of men. The results again indicate a definite tendency in the University (Table XII) to chose friends on the basis of physical proximity of domicile,

TABLE XIII
DISTRIBUTION OF CHOICES AND INDICES OF IN-GROUP REJECTION AMONG CLASSES
(UNIVERSITY)

Class	Choices Given to: (Specific Indices)										General Indices	
	No.	Freshman	Sophomore	Junior	Senior	Graduate	Total					
Freshman	56	75	48	1.72	20	2.14	10	3.75	6	3.79	159	2.25
Sophomore	62	67	.664	49	30	.884	25	.886	5	2.69	176	.840
Junior	32	35	.700	23	.759	14	16	.767	3	2.47	91	.952
Senior	28	20	1.40	14	2.21	18	.888	14	1	8.53	67	1.63
Graduate	17	15	1.09	11	1.65	10	.941	3	2.73	5	44	1.43
Total	195	212		145		92		68		20		537

Chi-square = 33.064. Critical value at the .01 level = 32.000.

TABLE XIV
DISTRIBUTION OF CHOICES AND INDICES OF IN-GROUP REJECTION AMONG MAJORS
(UNIVERSITY)

Major	No.	S	S	Choices Given to: (Specific Indices)						G. S.		General	
				S	A				L	Pre-M.	Total		Indices
Social													
Science	57	36		26	1.16	21	1.14	24	.710	46	.370	153	.767
Science	48	32	.742	20		20	.793	32	.353	31	.364	135	.549
Art	38	28	.642	16	.948	12		16	.535	27	.317	99	.590
Literature	27	14	3.46	12	3.39	8	4.04	23		17	1.35	74	2.96
Gen. Stud.													
Pre-Major	27	18	3.04	11	4.19	7	5.22	12	2.16	26		74	3.55
Total	197	128		85		67		107		147		535	

Chi-square = 15.829, this value being significant at the .50 level.

TABLE XV
QUESTION B.
DISTRIBUTION OF CHOICES AND INDICES OF IN-GROUP REJECTION AMONG APTITUDE
PERCENTILE GROUPS (UNIV.)

Group	No.		Choices Given to: (Specific Indices)				Total	General Indices	
			Low	Average		High			
Low (1-3.29)	45	36		36	1.31	48	1.35	120	1.34
Average (3.30-6.59)	59	28	1.38	51		57	1.22	136	.796
High (6.60-9.99)	81	31	1.75	60	1.18	98		189	1.39
Total	185	95		147		203		445	

Chi-square = 11.362, this value being significant at the .05 level.

at least in so far as the criterion ("keep in touch with after college") is concerned, but the indices are relatively low as compared with those of the College study.

Some resistance was encountered to the Questions B and D regarding persons disliked as prospective roommates.⁸ Some of the comments by people who refused to answer these questions are very revealing regarding the inhibitory effect of current mores on objectivity toward discussions of negative interpersonal relations. One girl (home economics) after answering all the questions conscientiously added these comments:

"I have a very uneasy feeling about this whole questionnaire, just filling it out in the 'interest of science' does not seem to justify it to me—I really don't know why I'm doing it. This analysis of friends is entirely contrary to what I have been taught at home and at church. I don't like to admit even to myself that there are people I definitely dislike—much less set their names down for other people to see. By far the greatest number of girls in this hall are quite agreeable to me and I'm sorry there isn't more room for 'likes'".

Another girl (music) returned the blank unfilled with the following comment:

"I am sorry that I cannot cooperate by filling out this questionnaire, but for several reasons, I do not feel right in doing so. I think it very unfair to deliberately dig out of my mind three people that I don't like especially. No matter whether they will know or not, I will know who they are, and would always feel as if I were accusing them unjustly and without good reason."⁹

The same note occurs in the following comment of a freshman:

"I think questions like this encourage intolerance. We should be urged to get along with people rather than try to avoid them."

⁸ Smucker (7) reports that in his study three times as many positive as negative choices were made (p. 123). One-third of those who participated in his study made no negative choices (p. 124). The comparable figures for the University study are: Approximately one-seventh of those who participated made no negative choices (31 out of 230).

⁹ This remark indicates that mere anonymity is not the sole consideration in the difficulty of securing negative choices. Smucker's suggestion (8, p. 383) that the objection can be met by establishing confidence in anonymity is therefore doubtful, and it is possible that a considerable number of the one-third of his total who made no negative choices abstained for reasons explicitly stated by some of our respondents as recorded above.

There is no doubt that the inclusion of Questions B and D asking for persons disliked as prospective roommates was a considerable factor in reducing the number of schedules returned although a follow-up request was accompanied by a letter aiming to meet the objections raised. It was pointed out in this letter that in response to the question, "Why?", such items as these were mentioned: "She smokes too much", "is noisy", "talks too much", "does not share my ideals", etc. (See Table XVI). The latter went on:

"Is it immoral to admit that you do not like these things? You are not asked to *judge* these people or to be uncharitable toward them. We all know very well that in our daily lives we avoid people we do not like and that others avoid us for the same reason. We may regret that fact, but only by facing it, rather than hypocritically denying it to ourselves, can we hope to find out *why* we dislike some people, and thus be able to do something to overcome our dislike. Our dislikes may reflect our own shortcomings, intolerance, etc. Why not face that fact?"

This reasoning was probably of doubtful efficacy in the face of the essentially emotional bias in our culture against *admitting* even to ourselves the dislike of particular persons because of its assumed violation of what are regarded as ethical and religious principles. Objective recognition of our dislikes of people arouses guilt feelings. The dislikes are accordingly suppressed into sub-verbal levels of feeling. Much psychotherapy undoubtedly consists of trying to objectify these suppressed dislikes by bringing them to the verbal level where they can be rationally dealt with.

As is well known, however, anonymity helps to overcome some of the reluctance noted above and a good many of the refusals in the university study here reported were probably due to the attempt to secure the information without assurance of complete anonymity. In order to make the questions regarding choices of roommates "truly sociometric" according to Moreno's criterion, the questionnaire was first launched with the assurance that the choices made would, as far as possible, be taken into consideration by the house mother in assigning rooms for the next year. While this was designed to have a salutary effect on securing cooperation so far as the positive choices were concerned, it doubtless increased the reluctance of respondents to indicate their "dislike" choices. As we have seen, many students felt "wicked" at admitting such dislikes even to themselves. They would likely be doubly inhibited in admitting these dislikes to a person in charge of the house. Accordingly, the follow-up

withdrew the original statement that the house mothers would have access to the information and gave assurances that only two research people would have access to the original data. Ninety-nine additional schedules were received as a result of this follow-up. Such a modification of the conditions was hardly adequate to overcome a negative attitude already formed against the original project.

TABLE XVI
REASONS ASSIGNED FOR DISLIKING PERSONS

<i>Characteristics</i>	<i>No. of times mentioned:</i>
loud, crude, coarse, noisy, show-off, aggressive	76
personality differences and conflicts, incompatibility, no interest in common	60
displeasing personal habits, untidy, sloppy, uncleanliness in room and person	52
snobbish, self-centered, conceited egotistical, superiority attitude	47
spoiled, young, silly, flighty, immature	47
theatrical, affected, insincere, drama major	38
demanding, overbearing, dogmatic, intolerant, outspoken, domineering, dictatorial	36
inconsiderate, thoughtless, uncooperative	30
bad reputation, different moral and ethical standards, and ideals	24
anti-social, unfriendly, cold, distant	24
talks too much	24
just don't like her, don't know why, don't understand her	23
queer, eccentric habits	21
rude, mean, sarcastic	20
boring, dull, stupid, uninteresting, wishy washy	19
selfish	18
different philosophy, outlook, and viewpoints	16
objectionable study habits	15
drinking, smoking	15
social butterfly, social climber, pushes herself	11
gossips, two-faced, not trustworthy	9
negativistic, defeatist attitude, pessimistic	8
racial prejudice	8
physically unattractive	8
nervous	7
complains too much	7
argumentative	7
religious differences	5
moody	5
too particular	4
too quiet	4
socially unattractive	3
lacking in sense of humor	3
poor taste in clothes	3
Total Responses	697

(c) Conclusions:

In a previous study, the entire population of a small college answered the question: "If, after leaving college, you could keep in touch with only three students now in college, which three would you choose?" The results indicate an always definite and in some respects a very strong tendency to name people belonging to one's own in-group as regards (a) common domicile, (b) college class, (c) major scholastic interest, and (d) socio-economic status. On the other hand, (e) scholastic standing, and "aptitude" as here measured showed little or no significant association with in-group preferences. The in-group indices were high with respect to each criterion approximately in the order mentioned above, common domicile being by far the most conspicuous in-group factor reflected in the indices.

A similar study was made in four women's residence halls of a large university. The University study on the whole, confirmed the findings of the college study but the results were less conclusive. This study also attempted to secure direct data on the inverse question, namely, the relation of intergroup *dislike* to the in-group categories used.

There are strong presumptive grounds for believing that propinquity is the prior or dominant factor which largely determines the positive in group indices found also among the other factors. That is, the accidents of propinquity determine, first of all, the universe from which choices are possible. The nature of college and class organization will automatically throw together with greater frequency the members of a particular class, and of a particular academic major. As for the in-group value of a common scholastic standing, the measures of this factor in the present study are admittedly crude and the indices secured were of negligible size. Socio-economic status, even in a highly democratic student-body, again, would be likely to find some expression in the fact that students of common socio-economic status, quite aside from any deliberate or conscious choice or discrimination on this basis, would be thrown together disproportionately more frequently by the fact that larger numbers of each status group would be engaged in common employment, amusements, etc.

The above conclusions are further supported by the fact that the University study showed that persons *disliked* tend to be chosen more frequently than by chance from the same in-groups as the persons *liked*. That is, our interpersonal relations are in essence in-group relations and any attempt to pursue further the factors which are associated with likes

and dislikes *with exposure or contacts held constant* should be conducted, to begin with, on the most intimate in-groups which nevertheless allows a range of preference. In the last analysis, of course, and to use the most extreme definition, an in-group may be said to consist *only* of persons *mutually desiring each other's association*, and we are interested in determining precisely why one group of individuals rather than another are in fact found so associated. The answer must clearly be sought by more refined methods and under conditions permitting control especially of the factor of propinquity. From this point of view the definition of in-group by classifications such as class, scholastic major, etc., may be said to be arbitrary and based on other than the true psychological or sociological criterion of group membership, namely, a conscious attraction as against non-members. Of course, it is still a permissible and valuable inquiry to determine to what degree in-group feeling exists among the members of the conventional and convenient classifications of people. It remains a highly important scientific objective to determine (a) *what types of classification and associations* of people are likely to be associated with strong in-group feelings, and vice versa, and (b) what are the general sociological processes operating to produce the observed results. For example, can it be shown that the phenomenon called attraction is merely a special case of conditioning and learning in approximately the following sequence: We *learn* to react to the people with whom we have contact; it therefore becomes *easier* to interact with them than with people with whom we have fewer or less intense contact; the *easier* interactions are the more *pleasant*; we call people whom it is easy and pleasant to interact our "friends", "in-group", etc.? On the other hand, if it can be shown that the interaction known as repulsion results not merely from infrequency of exposure or necessity to interact but from greater difficulty of learning to interact with facility between some people due to intrinsic differences in their behavior traits, interests, and emotional patterns, etc., then the attempt to break down group prejudices, discrimination, etc., by merely throwing the groups increasingly together and forcing them to interact can only aggravate the difficulty.¹⁰

The methods here employed are, of course, applicable to group cleavages of any kind—friendship (2), religious and ethnic (3), status (5), racial, occupational, political (6), or what not. Further light on the

¹⁰ Cf. Paul Deutschberger, "Interaction Patterns in Changing Neighborhoods: New York and Pittsburgh," *SOCIOMETRY* 9:303-315, Nov. 1946, p. 314.

questions raised will be secured perhaps from intensive analysis, not here included, of individual sociograms. The answers to the question, "Why?" (Table XVI), give some indication of the students' own reasons or rationalizations of their dislikes. More comprehensive and intensive study of the factors associated with in-group and out-group attractions and repulsions should yield reliable prediction principles of this basic social phenomenon.

NON-VERBAL VALIDATION OF GROUP CHANGES IN SOCIAL ATTITUDE THROUGH SOCIOMETRIC CHOICE

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CHOICE OF OTHERS AND SOCIAL ATTITUDES

In both educational and therapeutic groups, the leader is concerned with the attitudes of group members. In both types of group, his aim is to modify or "loosen" rigid attitudes so that increased open-mindedness and spontaneity may be practiced by members. The teacher is more directly interested in social attitudes, and the therapist is more concerned with members' attitudes towards themselves, although the two types of attitude are apparently related (5). To evaluate the effectiveness of his methods, the teacher may test for modifications in students' social attitudes by use of a paper-and-pencil attitude scale. If he is honest with himself and particularly if papers are not submitted anonymously, he may wonder to what extent students are merely reflecting the opinions or biases they expect him to prefer. Scales of this type are difficult to disguise; and situations under which their reliability is established by a strange examiner may be quite different interpersonally from situations in which the scales are administered by a teacher who has worked with a class for a semester, has developed varying relationships with individuals in the group, and holds the possibly threatening power of grading students at the semester's end.

The problem of this study is to determine whether by the indirect means of sociometric inquiry (9, 10) the changes revealed by a social attitude scale are validated. The hypothesis of this study has to do with relationships between one's social attitudes and one's choice of others in a group.

Pressures that arise in a face-to-face group and that affect members' attitudes seem to flow from at least three sources. The *leader* in his position of prestige may influence members, whether they apparently and compliantly seek his approval or openly reveal rebelliousness. The leader's attitudes need not be explicit; evidence in therapeutic groups indicates that a leader's un verbalized attitudes are communicated to patients much as a parent's seem to be conveyed to a child. Secondly, the *group* affects members' attitudes as mores are developed and certain attitudes and be-

havior are either approved, merely tolerated, or tabooed. To be accepted or not to be rejected by others and particularly by those in dominant roles in the group, one may have to alter one's ways. In adolescent peer groups (14), in a college community (12), and in adult discussion groups (8), modifications in attitude and behavior have been found to be related to group pressures in one direction or another. Finally, pressures arise from the *self*, and these may be forces primarily aimed at maintaining and fortifying the distortions and biases around which the self has become integrated.

The relationship between social attitudes and sociometric choice of others may *hypothetically* be patterned as follows. In a face-to-face group (such as a small class) members whose attitudes are rigid may be more likely to choose as associates others who will not tend to upset their biases. In the shelter of a sub-group or a partnership, a member may be protected from the larger group's forces that tend to modify his biases. The safest way to keep needed attitudes intact is to have significant communications only with those who see things as you do. However, when attitudes are "loosened," it is not so threatening to relate to others who see things differently. For some people, such relationships may begin gradually in the course of an interactional process: as their attitudes change, they are able to increase communication with others whose attitudes are different; and as these relationships develop, their attitudes are modified further. For other people, the primary determinant of modification in attitude in a group may be through relationship with the leader, and changes in choice of peers may follow. Whatever the process of change, the choice of others whose attitudes are markedly different from one's own may be interpersonal evidence of the loosening of attitudes; just as the choice of others whose social attitudes are much like one's own may be evidence of the maintenance of rigid attitudes in the chooser.

No assumption is made here that choice of others among young adults is the result *solely* of similarity or dissimilarity of social attitudes. Certainly many other factors which need to be investigated are involved in such choice. In social science classes, however, when a choice of work-mates is offered students, it seems likely that the opinions others hold will be more or less directly considered in any choice of them. It may well be that such common institutional background as church affiliation is a more conscious consideration in the choice-process; and if as Newcomb has hypothesized (13, pp. 203-204), institutional influences are primary determinants in the development of social attitude, then the drive to choose

another because of identical church affiliation may easily be spelled out to "he thinks like me."

The problem of this study is to determine whether sociometric choices validate the findings of a social attitude scale when the latter is administered before and after an educational experience and its results indicate group changes in attitude. If attitudes are to be considered, in Gordon Allport's terms, forms of readiness for response or guides to the course of behavior, then attitudes that are truly modified should be evidenced not only verbally on a paper scale but in interpersonal behavior too. Choice of others is an aspect of such behavior. A true loosening of attitudes should perhaps be reflected in increased choice of others whose attitudes are different from one's own. If the second administration of an attitude scale reveals changes, but a second sociometric inquiry reveals a group choice similar to the initial sociometric pattern—particularly if that initial pattern indicates the choosers' preferences for others whose attitudes are like their own—one may *perhaps* infer that (a) the attitude scale is deficient or was improperly administered, and no *real* changes in attitude took place; (b) the leader communicated successfully his own attitude expectancies but the subjects really maintained their sets; or (c) modifications in attitude did not become incorporated into the group life, at least to the extent necessary for these changes to be reflected in modified group behavior.

THE SUBJECTS AND THE SETTING

The subjects of this study were members of two liberal arts college classes (Groups A and B) in the first semester of a year's course in adolescent development. In Group A there were initially 26 students; at the end of the term, 24. In Group B there were 25 students throughout the semester. Mean age of the subjects in both groups was slightly over 20 years. All in their junior year, the students were of average and comparable academic aptitude and performance, according to their American Council on Education Psychological Test scores and their point-grade ratings. In Group A there were 11 men, the others women; in Group B there were 7 men and 18 women. All students were white.

Both classes were taught by the same instructor; curricula were identical, except that all but one of the students in Group A concurrently served as leaders or advisors of youth groups in community agencies in an experimental field work program while all but five of the students in Group B had no field work. In both groups the discussion method was used extensively. The four monthly seminars on field work experience in

Group A were matched by committee work and reports on field trips or on outside reading in Group B. While students in Group A had joint extra-class associations if they worked at the same youth-serving agencies, sub-groups in Group B had joint meetings on campus and elsewhere in their committee preparations. There were thus roughly comparable interpersonal relations fostered in the two groups by course requirements.

GROUP CHANGES IN SOCIAL ATTITUDE

The S-A (Middletown) Scale was administered to all students at the beginning of the term and readministered at the end of a four months' period. The S-A Scale is composed of 120 items adapted from Chapter XII of the Lynds' *Middletown in Transition*. Devised by the writer and described in greater detail elsewhere (11), the Scale has a reliability coefficient of .857, corrected by the Spearman-Brown formula for doubled tests.

On an answer sheet for the Scale, the student indicated either agreement (A), question (?), or doubt or disagreement (D) in response to each of the items on the Scale. Because an index of the loosening of attitudes in these groups was needed, rather than a measure of any new set of biases substituted for those with which the students came to the classes, the total number of items with which a student agreed was called his S-A Scale score. Thus a decrease in score indicated a decrease in certain convictions about social issues (as the people of Middletown saw them). The fewer a student's agreements, the more accurately one might say his social attitudes were "loosened" or less rigid. Initial and final scores on the Scale for Groups A and B are presented in Table 1. The directions in which subjects' scores shifted are indicated in Table II.

These data reveal that group changes in both groups were in the direction of less rigid social attitudes. While mean score changes (Table I) are not statistically significant at the 5 per cent level, use of the chi-square test of significance on the hypothesis that subjects would distribute

TABLE I
CHANGES IN SOCIAL ATTITUDE SCORES ON THE S-A (MIDDLETOWN) SCALE

	Group A	Group B
Initial mean	28.33	26.60
Final mean	25.87	23.88
Difference in means (change)	-2.46	-2.72
Initial median	27.0	27.0
Final median	26.5	23.0
Differences in medians	-1.5	-4.0

TABLE II
DIRECTIONS OF CHANGE IN ATTITUDE ON THE S-A (MIDDLETOWN) SCALE

	Group A	Group B
Decreasing scores	13	17
No change (difference zero)	2	4
Increasing scores	9	4
Total no. of students	24	25

themselves equally by chance in directions of change (Table II) reveals that shift in Group A are significant at the 5 per cent level and changes in Group B at the 1 per cent level.

The problem then was to investigate the changes in choice of others in the two groups. Were there concurrent shifts on the second sociometric inquiry in the direction of a larger proportion of choices of others whose social attitudes were more unlike those of the choosers than in their initial choices?

GROUP CHANGES IN RANGE OF CHOICE

Students in Groups A and B were asked early in the semester to choose from among the others in their class those with whom they would most like to sit and those with whom they would most like to work on committees or in field work. Three choices were requested on each criterion, to be listed in order of preference. The students in the classes sat in a circle, each with a large card at his feet with a number on it; choices were to be made by number rather than by name so that if the name of a student was not known or if it had been forgotten the student might still be chosen, a procedure used by Barker (1). At the end of the first semester of the year's course, students were asked again through the same procedure to list in order their three or so choices for class-mates for the following term.

To discover whether members of these two groups changed their choices of others in their groups in a way that might indicate a widened range of choice for those whose social attitudes differed more markedly from their own, the scores on initial and final administration of the S-A Scale were ranked. This conversion of scores was made because absolute differences between the scores of student X and student Y had little meaning, particularly since choice of others was confined to the group. If student X had an initial S-A Scale score of 46 and student Y had an initial score of 38 and X chose Y, the difference of 8 points between their scores suggests a wider range between chooser and chosen than the differ-

ence of 2 between the ranks of these two students on the initial test. Scores of all students on the readministration of the Scale were also ranked. The differences in rank on the Scale between chooser and chosen for each of the choices in the initial sociometric inquiry and then in the final sociometric inquiry (using ranks from the *second* administration of the Scale for the latter and ranks from the *first* administration for the former) were calculated. These differences in rank were tallied and were found to cluster within differences in rank (intervals) of 0 through 6, 7 through 12, and 13 through 18 plus. Arbitrarily, these intervals were called "close choices" (0-6), "differing choices" (7-12), and "widely differing choices" (13-18 +).

The hypothesis is that if the Scale changes show a trend in the groups toward less rigid attitudes (a decrease in score), there will be comparable decreases also in the percentage of student choices that are "close choices" and an increase in the percentages of "differing choices" and "widely differing choices." The findings in Groups A and B are presented in Tables III and IV.

TABLE III

PERCENTAGES OF INITIAL AND FINAL CHOICES IN GROUP A BY DIFFERENCES IN RANK IN SOCIAL ATTITUDE BETWEEN THE CHOOSER AND THE CHOSEN

Differences in rank order between chooser and chosen	1st choices			2nd choices			3rd choices		
	Initial Seat- mate	Work- mate	Final Class- mate	Initial Seat- mate	Work- mate	Final Class- mate	Initial Seat- mate	Work- mate	Final Class- mate
Close choices (1 - 6)	52	56	33	36	50	29	46	48	32
Differing choices (7 - 12)	24	24	33	28	25	42	29	30	42
Widely differing choices (13 - 18+)	24	20	33	36	25	29	25	22	26
TOTAL	100	100	99	100	100	100	100	100	100

Tables III and IV reveal the widened spread of choice for others whose attitudes are different from one's own in *both* Groups A and B for the *first choices* and in Group A on all three choices in the final sociometric inquiry when these are compared with initial workmate choices. These changes are not statistically significant below the ten per cent level when the chi-square test is used to test the hypothesis that the original distribution of choices in the groups will reoccur—i.e., initial percentages are expected (e) to reoccur as final percentages (o)—but the repeated trend is clear.

TABLE IV
PERCENTAGES OF INITIAL AND FINAL CHOICES IN GROUP B BY DIFFERENCES IN RANK
IN SOCIAL ATTITUDE BETWEEN THE CHOOSER AND THE CHOSEN

Differences in rank order between chooser and chosen	1st choices			2nd choices			3rd choices		
	Initial Seat- mate	Work- mate	Final Class- mate	Initial Seat- mate	Work- mate	Final Class- mate	Initial Seat- mate	Work- mate	Final Class- mate
Close choices (1 - 6)	52	52	36	36	40	60	42	38	46
Differing choices (7 - 12)	20	32	44	40	44	20	42	50	37
Widely differing choices (13 - 18+)	28	16	20	24	16	20	16	12	17
TOTAL	100	100	100	100	100	100	100	100	100

TENTATIVE CONCLUSIONS

The more consistent choice changes in Group A (in the direction of decreased "close choices" and increased "differing choices" in final first, second and third choices) occur despite evidence of smaller change in Group A than in Group B on the S-A Scale (Tables I and II). Perhaps a truer or more functional or operative change in attitude occurred in Group A, and field work experience in Group A may have been a determinant here. The writer is not aware of any clear differences in interpersonal processes in the two groups that might be related to the differences in the groups' choices of others.

Questions may be raised about the meaning of first choices. The significance to the person choosing of his first choice, as distinguished from his second and third choices, is a situation about which we have no specific knowledge. In these two groups, which the writer came to know quite well, first choices for classmate in the final sociometric inquiry often seemed to be the chooser's closest associate in the group. If we consider merely the first choices in these two groups, there appears to be support for the hypothesis that sociometric inquiry validates group changes in social attitude as revealed by the use of a reliable scale. Findings on the second and third choices of Group B in the final sociometric inquiry, however, indicate a need to test our hypothesis further and to study the meanings of second and third choice responses for different types of subjects in different group situations. Study of changes in choice in a group which S-A Scale results indicated had become *more* rigid in social attitude also seems necessary. Would the range of choice of those whose attitudes differ grow narrower?

There is, of course, no reason to assume that because two phenomena correlate they necessarily have any causal relationship with each other.

Specifically, here, it is possible that the evidence of less rigid social attitudes in the two groups and the widened range of choice of others who think differently in both groups are merely unrelated simultaneously occurring findings. When one considers possible causes for the decrease in "close choices" and the increases in "differing choices" in Group A and in first choices in Group B, another proposition arises.

This proposition is that this is a "normal" phenomenon in a group in which interaction has occurred over a period of time. One wonders, though about the reverse phenomena in Group B among its second and third final choices. Changes in choice of others in certain other groups after a period of time and after certain group experiences have sometimes been noted to reveal shifts toward a greater percentage of choice for those who are in a sense "different." For example, after a one week camp experience, the boys and girls in Faunce and Beegle's project (4) showed an increased choice for others who came from a different county and for campers of the opposite sex, though age cleavages were not changed. Aside from the increased range of acquaintanceship and therefore the existence of a wider known population to choose from after a period of time spent in joint experiences, there are no known factors in group life that lead us to believe that *every* group, whether its experiences have been defense-lowering or anxiety-arousing and its social attitudes have been loosened or not, will widen its range of choice for those who differ. Deutschberger (3) has shown that the individual tends to discontinue voluntary association with unlikes in race when the neighborhood in which he lives undergoes rapid change of population. Clinical evidence suggests that threatening experiences will increase in-group choices. Moreover, the studies of Horowitz (6), Campbell (2) and others in the field of inter-group relations indicate that mere contact with those who are "different" in no way assures a broadening of tolerance; such contacts may merely reinforce the stereotypes that people bring to such contacts. Moreover, factors in classroom atmosphere appear to affect variously the sociometric structure shown in children's groups (7). One wonders what differences there were between Groups A and B in (a) the leadership relationship, (b) the other group processes and pressures and (c) the dynamics of individuals in the two groups to account for the second and third final choice changes in Group B—despite its first final choice that coincides with the consistent change in choice pattern in Group A. The inconsistent pattern in Group B seems like sufficient evidence alone to discard the proposition that merely joint experience widens the range of choice—i.e., that this is a "normal" phenomenon in a group.

Certainly further study must be made of the effects of certain situations in group life on members' acceptance and choice of those who differ. Meanwhile, the findings of this study may *tentatively* be accepted as evidence that: (a) in a face-to-face group, spread in choice of others who differ in social attitudes will be revealed by *first choices* when other evidence indicates group changes in the direction of less rigid social attitudes, and (b) *first choices* in a sociometric inquiry may be used to validate a group's loosening of social attitudes when this change is revealed by the administration of an attitude scale.

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BUDDY RATINGS: POPULARITY CONTEST OR LEADERSHIP CRITERIA?*

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In Brief

The need for criteria against which to test predictors of leadership potential led some of the armed forces personnel research organizations to turn to "buddies," "peers" or coworkers for ratings in preference to evaluation by superiors. Industrial personnel research is also turning to this technique. There has been some criticism that "buddy ratings"² are not criteria of leadership, but rather mere popularity contests. This criticism deserves investigation. This study conducted on two Officer Candidate Classes investigates the interrelationship of a dozen different criteria secured from several sources. These included ratings at various times throughout the six-month course by fellow students and by superiors, as well as various course grades. Intensive statistical analysis of the results seem to justify the continued use of buddy ratings as leadership criteria. The buddy nominations (variable 1) measured as early as the first month of training the same factors which they measured three months later. Moreover, what they measured in the first month is the same as that rated by superiors, rating after four months' observation. The ratings by superiors measured something quite different in the first and fourth months. It was not until the fourth month that superiors' ratings reflected the leadership factor which fellow students identified in their first-month ratings.

The Search for Criteria

One problem is common to all groups engaged in personnel research. It is that of developing criteria of performance, efficiency, or behavior against

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¹ This study is based upon data collected in connection with Project No. 4071, Personnel Research Section, Adjutant General's Office, Department of the Army. The opinions expressed are those of the authors and do not necessarily express the official views of the Department of the Army.

² The term "buddy ratings" is used in some military circles as a popular substitute for sociometric tests. (Editor's Note.)

which to test personnel devices, procedures and methods. This problem is equally present in civilian and military research. In many situations, the only feasible measure consists of a rating of performance. But who can best do the rating—superiors, of whom there are at most one or two who know each worker; or coworker, from whom a number of independent judgments can be secured?

When the war created an urgent need for research in almost every aspect of personnel, the workers in the field were faced with the need for developing criteria for numerous jobs. In many instances selection programs were developed for training courses, and academic success could be used as a criterion for predictors in the aptitude areas. But most of the jobs for which selection was desired encompassed a great deal more than these aptitudes. Leadership, personality and interest factors were at least as important as academic success. To secure criteria against which to test predictors in these areas, research workers were forced to fall back on ratings.

Well aware of the weaknesses of conventional rating methods, the personnel technicians sought to minimize them. To overcome the unreliability of individual ratings they looked for situations in which a number of independent raters could be used. Even though a single rating may be unreliable, the average of a number of such ratings may provide a stable measure relatively free of bias and the idiosyncrasies of every single rater.

They recognize the fact that in any group it was easier to identify and rank the individuals who were extremely good and those who were extremely poor in the job than to rank the middle group. With only one or two raters for each man, this method identifies only extreme groups. However, with a sizable number of raters it was possible to have each rater nominate the best four or five and the poorest four or five members of the group. Subtracting the number of "poor" from the number of "good" mentions and dividing the remainder by the number of possible mentions yielded a continuum usable for criterion purposes.

There was seldom if ever a situation in which the number of supervisors familiar with the efficiency of the worker was adequate to permit multiple nominations. For most jobs, on the other hand, there was a substantial number of coworkers in a position to observe the man's work if only they could, and would, evaluate it properly. The next natural step was to have the nominating of best and poorest workers done by the workers themselves. Many jobs lent themselves very well to this procedure. Groups in which the members worked close together, so that each worker knew the others, seemed so suited.

There were other aspects of peer or coworker ratings that recommended this procedure to the personnel research worker. There are often aspects of a position which the coworker is in a better position to evaluate than is the supervisor: e.g., aspects of personality often carefully concealed from higher-ups.

Under the stimulus of this set of circumstances, evaluation by peers—"buddy ratings," if you will—increased in frequency in armed forces personnel research.

Like all criteria, they suffer from the need to accept them at face value. Standards against which to test them—criteria of criteria—do not usually exist. If there is available a yardstick against which to test a criterion, it would itself become the primary measure and the need for the criterion would at once vanish.

Thus, when the critics of buddy ratings objected and said they were no more than popularity contests, there was little evidence on which to refute the criticism. True, the critics offered no data in support of their contentions. Yet the burden of the proof rests with the advocates rather than with the critics of the procedure.

A Rare Opportunity

Usually the personnel research worker considers himself fortunate to be in a position to secure a single adequate criterion. In developing devices for the selection of enlisted men to attend Army Officer Candidate Schools, the staff of the Personnel Research Section found that it was in a position to collect performance measures from a variety of sources. Further, it was possible to identify the situations in which several different kinds of raters were able to observe trainees. Finally, it was possible to observe a newly formed group that worked at a common task and whose members were in close association with each other.

The Groups We Studied

The studies were conducted at the Signal Corps Officer Candidate School at Fort Monmouth, N. J. The data were gathered in the summer of 1945. Two classes were studied. There were 82 Officer Candidates in the first class and 52 in the second.

The Variables

In addition to scores on a high-level intelligence test (Officer Candidate Test) and academic grades, nine sets of ratings were collected by different methods, from different raters and at different times. The ratings were

collected from the first class (82 students) at the end of one, two and four months in the school. In the case of the second class, ratings were collected only at the end of the first month of training. Table 1 describes the several criterion and predictor variables and the pattern of their collection.

In addition to the variables described in Table 1, data were also available on the following:

Retention beyond two months. Officer candidates were discharged at any time during the training period for academic inaptitude, disciplinary reasons, or failure to show promise of having the personality characteristics thought necessary in an officer. For purposes of study each class was divided into two parts, those who were released prior to the end of the second month of work and those who were retained beyond that time.

Graduation. Failure (for any reason) to graduate from OCS and receive a commission represented a waste of time, money and manpower. To determine the relationship between the various other variables and this personnel action, the classes were divided on the basis of whether or not each individual successfully completed the course.

Officer Candidate Test. This is a high level pencil and paper test of general intelligence which had been administered to all applicants for OCS prior to their admission to the school.

Recommendation Blank. This is a standard form sent to civilian acquaintances of the applicant. The names are supplied by the candidate. It is primarily a checklist and rating form which is objectively scored.

OCS Interview. Prior to being selected to attend OCS, each candidate is interviewed by a board of officers. A standardized interview is employed and the members of the board rate the candidate on several traits observable in the interview and thought relevant to officer success. The forms are objectively scored.

Previous Performance. Ratings by non-commissioned officers under whom they had previously served were available for the Officer Candidates studied.

The Analysis

Four separate factorial analyses were computed. Three of the analyses were for the three sets of ratings collected in the first, second and fourth month for class one. The fourth analysis was done for the variables collected on the second class at the end of the first month of training. Four factors were identified by the analyses. The first three of these were common to all four analyses. The fourth was present only for the ratings collected from the first class in its fourth month. (See Tables 5 and 6.)

TABLE 1
THE CRITERION VARIABLES STUDIED

No.	Symbol	Nature of Criterion	Obtained from	Reference group	Class one Class			
					1	2	4	two
1	AN-S-S	<i>Anonymous Nominations by Students by Section:</i> Each Student nominated 5 men in his section "who possess the personality traits least desirable in an Army officer." Score in this and other nominating criteria was: "most" mentions minus "least" mentions divided by possible mentions.	Student	Section	x	x	x	x
2	AN-S-C	<i>Anonymous Nominations by Students by Class:</i> Same as 1 except nominations were from entire class rather than section.	Student	Entire Class				x
3	ALR-S-S	<i>Average Leadership Ratings by Students by Section:</i> Every student rated each of the other students in his section for 10 leadership qualities on a school form. Each rating form was first averaged for the 10 ratings, and then all forms for a given student were in turn averaged.	Student	Section	x	x	x	x
4	ALR-JTO-C	<i>Average Leadership Ratings by Junior Tactical Officer by Class:</i> Same as 3, except that ratings were made by 8 Junior Tactical Officers each rating all men of the class known to him.	Jr. Tactical Officers	Entire Class	x	x	x	x
5	LR-STO-C	<i>Leadership Ranking by Senior Tactical Officer by Class:</i> The Senior Tactical Officer ranked the students in each class according to leadership. Position in the ranking was the students score.	Sr. Tactical Officer	Entire Class				x

TABLE 1 (continued)

No.	Symbol	Nature of Criterion	Obtained from	Reference group	Class one Class			
					1	2	4	two
6	AN-JTO-S	<i>Anonymous Nomination by Junior Tactical Officer by Section:</i> Same as criterion 1 except that nominations were made by 8 Junior Tactical Officers.	Jr. Tactical Officers	Section			x	
7	AN-TO-C	<i>Anonymous Nominations by Tactical Officers by Class:</i> Same as criterion 2 except that nominations were made by the 8 Junior and 1 Senior Tactical Officers by class.	8 Jr. and 1 Sr. Tactical Officer	Entire Class				x
8	OER-TO	<i>Officer Efficiency Report by Tactical Officers:</i> This was a two-section efficiency report consisting of 25 forced-choice items and a 20-point overall scale completed by the most appropriate Junior Tactical Officer, and the same 20-point scale completed by the Senior Tactical Officer.	Jr. Tac. and Sr. Tactical Officers	Individual				x
9	ALR-AI-C	<i>Average Leadership Rating by Academic Instructors by Class:</i> Same as criterion 4 except that forms were completed by Academic Instructors for all students of class known to each.	Academic Instructors	Entire Class	x	x		x
10	AAG-AI	<i>Average Academic Grades by Academic Instructors:</i> Based upon an average of daily and monthly objective examinations.	Academic Instructors	Individual	x	x		x

Factor I. *Academic Standing.* Highest loadings for this factor are for academic grades (10), leadership ratings by academic instructors (9), and for the Officer Candidate Test of Intelligence (11). Moderate to small, but always significant, loadings appear also on the Anonymous Nominations by Students (1) and

for Average Leadership Ratings by Students (3), indicating that sectional standing among "buddies" was determined in part by the observed performance in the class room. Student nominations by class (2) and all ratings by tactical officers (4, 5, 6, 7, 8) who were unacquainted with classroom performance showed insignificant loadings (with a slightly negative trend) on this factor. The factor is therefore identified as *Academic Standing*.

Factor II. *Leadership*. High loadings on this factor occur for all student nominations and ratings by class or section (1, 2, 3) for all periods for both classes. While loadings are only moderate for early periods for ratings or ranking by tactical officers (4, 5), the loadings become equally high for ratings, rankings, and nominations by the tactical officers (4, 5, 6, 7, 8) after 4 months acquaintanceship. Ratings by academic instructors (9) were low but significant, while those for grades (10) and the OCT (11) were not significant. The fact that both students and officers agree on this factor serves to identify it as *the leadership* factor which both were attempting to rate.

Factor III. *Tactical Standing*. This factor has loadings on all, and only on ratings, rankings, and nominations by tactical officers (4, 5, 6, 7, and 8). Loadings are about equally high for all periods. The lowest significant loading occurs on the officer efficiency report (8), where the nature of the forced-choice items in part controls the ratings. This factor is therefore identified as *standing in tactical performance*.

Factor IV. *Group Difference Correction*. This factor has moderate loadings on only the anonymous nominations *by class* by students (2) and tactical officers (7). The only other loading is a barely significant one for leadership ratings by junior tactical officers by class (4). This factor appears to be a *corrective element* based upon unequal range of leadership ability within the various sections.

Reliability

To be at all useful, a criterion must naturally be reliable, i.e., those who are rated high on the measure at one time should continue to be so rated after an elapse of time. This study permitted the comparison of a number of rating techniques on the first class after the passage of one month and again three months after the original ratings had been made. Table 2 shows these reliabilities. While student nominations and student leadership ratings were about equal in stability after the passage of one month, both were more reliable than ratings assigned by either the Junior or Senior Tactical Officers.

All of the reliability coefficients over a three-month period are smaller than over a one month interval. The reliability of student nominations,

TABLE 2
REPEAT RELIABILITY OF SELECTED CRITERIA

Criterion	After 1 month	After 4 months
1. (Buddy Nominations)	.75	.58
3. (Buddy Ratings)	.76	.17
4. (Superiors' Ratings)	.42	.19
5. (Superiors' Ratings)	.58	.28

however, remains at a level that may be considered useful. The reliability of the other three variables is such as to make doubtful their usefulness as criteria. In the case of the student's rating (as distinguished from nomination) and both Junior and Senior Tactical Officer ratings, it is clear that what they measure in the fourth month is something quite different than what they measure in the first month.

Predictability

To the extent that criteria are collected for the purpose of using them as a basis for the testing and weighting of selection instruments, it is essential that they be predictable. The entire philosophy of personnel selection rests on the assumption that, to a degree at least, it is possible to predict in advance of selection which applicants for a job will be more and which less successful. If the measure of success criterion cannot be predicted even by itself, it is neither feasible nor worthwhile to predict it by any battery of personnel instruments.

Table 3 compares the predictability of the nominating technique with that of academic grades for a number of possible selection instruments.

TABLE 3
PREDICTABILITY OF CRITERION 1 (BUDDY RATINGS) AND CRITERION 10 (ACADEMIC GRADES)
BY VARIOUS KINDS OF PREDICTORS AFTER ONE MONTH (HIGHER
COEFFICIENT IN EACH COMPARISON IS UNDERLINED)

	Buddy ratings (Var. 1)		Academic grades (Var. 10)	
	(1)	Class (2)	(1)	Class (2)
<i>Aptitude:</i>				
Officer Candidate Test	.23	.29	.56	.80
<i>Personality:</i>				
Recommendation Blank	<u>.41</u>	<u>.36</u>	.12	.14
Interview	<u>.18</u>	<u>.13</u>	.05	-.04
<i>Previous Performance:</i>				
Ratings by Non-Commissioned Officers	.19	.33	-.15	.15

Comparisons are presented for both class one and class two. The Officer Candidate Test is the only selection instrument for which academic grade

is more predictable than buddy nominations. This is gratifying, since the test was included to predict academic success. The other predictors were included to afford measures of the non-academic aspects of leadership.

Relation to Personnel Actions

Personnel who fail the training course for a position (in this case those who do not graduate from Officer Candidate School) represent a waste of time and money. There is obviously no point in hiring employees who will never be put on the job for which they were employed or of sending men who will never become officers to Officer Candidate School. From this point of view, a desirable criterion should be fairly well related to retention in the school and to its successful completion. Table 4 compares buddy nominations and academic grades with respect to their relationship to these personnel actions. Both criteria are equal in their relationship to separation and non-graduation. Thus it would appear that each is measuring an important aspect of success. Since the two criteria have low correlation, it is also clear that each is measuring a different aspect. In this situation, use of only one (and academic success is frequently used alone in such situations) would be doing only half the job. Obviously ultimate

TABLE 4

CORRESPONDENCE OF CRITERION 1 (AN-S-S) AND CRITERION 10 (AAG-AI) TO RETENTION (FOR AT LEAST 2 MONTHS) AND TO GRADUATION

	Buddy Ratings (AN-S-S)	Academic Grades AAG-AI
Retention (at least 2 months)	.70	.71
Graduation	.49	.50

success at Officer Candidate School depends as much on what buddy nominations measure as it does on what academic grades measure.

What Does It All Add Up To?

The analysis of criteria has necessarily been predicated on what amounts to an examination of the internal relationships among the various ratings and other measures of success. The study has looked into the comparative predictability of buddy ratings and such other criteria as academic grades, attrition, and graduation. Moreover, the various available criterion measures have been shown to differ widely in their reliability.

TABLE 6
FACTOR LOADINGS ON VARIOUS CRITERIA TAKEN AFTER VARYING NUMBER OF MONTHS IN CLASS
 (Decimal Points in Front of Factor Loadings Have Been Omitted)

Factor	I. Academic standing				II. Leadership				III. Tactical standing				IV. Group difference correction	
	1	1	1	2	1	1	1	2	1	1	1	2	1	1
Class	1	2	4	1	1	2	4	1	1	2	4	1	4	
Months in class														
Criterion														
1. AN-S-S	41	52	55	30	74	74	64	80	09	10	08	04	17	
2. AN-S-C			19				87				09		40	
3. ALR-S-S	29	41	28	22	80	72	70	81	00	-10	-10	-04	-11	
4. ALR-JTO-C	-16	-09	-11	08	37	50	80	50	65	66	51	67	22	
5. LR-STO-C	-01	04	18	19	47	39	69	53	61	79	62	67	04	
6. AN-JTO-S			-06				71				43		-09	
7. AN-TO-C			-16				60				51		49	
8. OER-TO			-08				79				32		09	
9. ALR-AI-S	81	56		57	26	21		49	-11	25		15		
10. AAG-AJC	90	79		91	02	12		08	09	04		17		
11. OCT	55	68	49	80	-03	00	-14	00	-02	00	00	02	-09	

From the analyses presented above we may make the following tentative conclusions about the use of buddy nominations as criteria:

(1) *From the factor analyses:*

- Buddy ratings appear to be the purest measure of "leadership." Tactical officers are also able to rate this trait but their ratings are quite heavily weighted by tactical standing. Academic instructor's ratings are practically useless for the evaluation of this trait.
- Coworkers are able, at the end of one month, to evaluate leadership to a degree equalled by instructors (tactical not academic) only after four months of observation.
- Nominations (variable 1) which are more reliable than graphic ratings (variable 3) are equally good measures of leadership. They have the added advantage of being easier to secure.
- Nominations by class appear to be better measures of the leadership factor than any other variable. This would appear to indicate the advisability of predicting buddy ratings on the widest base upon which the acquaintanceship of the members of the group permits.

(2) *From the reliability comparisons.* While both nominations and graphic ratings by coworkers show quite satisfactory reliability after one month, the reliability of nominations after four months is outstandingly higher than that of any of the

Excerpt

other variables upon which the test was made. This is probably further evidence of the fact that the nominating technique has the property of early identification of the members of the group who constitute the two extremes of the leadership distribution.

- (3) *Predictability.* Except for prediction by the aptitude test, nominations were better predicted by all of the proposed selection devices than was the more commonly used academic grade criterion.
- (4) *Agreement with personnel action.* If ability to remain in the school at least two months is considered desirable, it may seem that nominations by buddies are as highly correlated as are academic grades, with this overall measure of success. Similarly, buddy ratings contribute as much as academic grades to the overall criterion of graduation.

The Factor Analysis

Multiple factor analysis was computed on each of four matrices. Three orthogonal factors emerged from each of three of them. The fourth matrix yielded four factors. In each case the final factors were rotated to simple structure. The matrices of correlation and of residuals are presented in Table 5. Table 6 presents the factor loadings. Since three of the four factors found were common to three of the analyses, the loadings are presented together.

MILITARY USE OF SOCIOMETRIC AND SITUATION TESTS IN GREAT BRITAIN, FRANCE, GERMANY AND THE UNITED STATES

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In all science, no aspect is more fascinating than what the scientist is able to see in his own data, what perceptions he brings to his data, and indeed, what instruments he considers "fit" for a particular purpose. The frame of reference of the investigator will, of course, affect what his data "tell" him, according as this is broad or limited in what it will *allow* him to perceive in the very findings he may be looking at. And such scientist's immediate frame of reference will in turn reflect the broader soil of the culture as a whole within which it was built in interaction with his temperamental affinity for one or another aspect of expression.

Such considerations seem to have much to do with the forms taken by and the uses made of sociometric and spontaneity-situation techniques. It may therefore be worthwhile to draw attention especially to the contrasting methods of situation testing in Germany as compared with Great Britain, France, and the United States. Very obvious points of difference between them suggest also that possibly no aspect of a country's culture is so sensitive an instrument to measure the status of individual personality—the worth and respect that is conceded it—as the methods its professional psychologists use for official, governmental purposes; when such psychologists are called upon to serve their culture by setting up a processing plan for selecting military personnel, many tell-tale lights may be inadvertently thrown upon such a major point as how the individual is regarded in the given culture.

As we study the situation tests used by the military psychologists in Germany under the Nazi regime, as reported by Ansbacher, we note that not one of them allows the individual scope and variety in solutions, nor gives him a chance for personality expression *per se*, nor, last not least, provides a vehicle for him to show how he would go about developing well integrated team-relationships.

Command Series (Befehlsreihe). In this series, which takes about 45 minutes, essentially will power and physical performance are tested. It requires the execution of commands and actions under one's own initiative and under specific, particularly physical, conditions. For example, the testee receives at the beginning

of the examination the command to carry out the following orders at stated times: deliver a message, announce the time, put a letter in a box. Then he is asked to pack his knapsack and to get fully equipped with knapsack, belt, rifle, and steel helmet. Thus equipped, he must walk a free-swinging pole and at the same time throw a rope over several hooks mounted to his right and left at various heights, attaching the rope firmly. Ratings on bodily agility, attention, intellectual efficiency, memory, etc. are gained from such tasks. During the test the examiner changes his tone of voice. Minor mistakes are severely criticized to observe the effect on the testee. Physical endurance is tested in a task where the testee has to climb a straight wall, weighted with various loads.

The testee is forced to repeat the most difficult task. For this repetition he is either cheered on or calmed down, depending on his personality.

Leadership Sample. This test, known as *Führerprobe* or *Anleitungsarbeiten*, consists essentially in the task of instructing a group of soldiers, which is kept available for this purpose, in some mechanical task, as for example making a coat hanger out of a piece of wire. The testee has to explain the task clearly and demonstrate it. Another assignment may be to give a lesson on some well-known painting. Finally, he is asked to give a talk to the soldiers on some topic that interested him and find out by questions at the end to what extent he has succeeded in making the soldiers understand the topic. "Since men can influence men only when they show themselves adequate and free, the characterological examination reaches its peak at this point."¹

There would appear to be more in common between these tests and performance or intelligence tests than to situation tests within the spontaneity testing climate. The man is tested as if he were a group symbol for a part in the Army organization and for stereotyped settings in that organization. The term "real" situation is misleading for such a series of tests because who can know what the situation will be in reality? Such an approach if instituted as training procedure, as Moreno² has pointed out, carries very apparent dangers from a military standpoint, quite aside from the hazards to individual personality.

An illustration as to what goal determination does to the learner is "goose step" learning, the model taken from some

¹ Quoted from H. L. Ansbacher, "German Military Psychology," *Psychological Bulletin*, 38: 370-392, June, 1941, pp. 382-83.

² Quoted from J. L. Moreno, "The Spontaneity Theory of Learning," p. 4, *Psychodrama and Sociodrama in American Education*, edited by R. B. Haas, 1949.

German military schools. The learner rehearses, he is meticulously drilled as to how to behave in special situations because it is assumed that he will be more accurate in handling a specific situation the better he has rehearsed it; he is made to learn like an actor memorizing his rôle. The result may be a great precision in solving that task but a minimum of spontaneity for anything else which might occur unexpectedly. If a new situation takes place for which the student-soldier has no spontaneity experience to fall upon, he'll be blinded and blocked by the very clichés he has learned to master.

In any event, what was produced, in the military work under the Nazi regime, was a rigid form of the spontaneity test, goal-"fixed," with little leeway for the subjects to find expression. While tests in this general category or having similar features were also used by the American Office of Strategic Services Staff and to some extent by the British, such "restricted" tests comprised only a small (and less important) part of their programs.

Thus, although the German military used "situations" for testing performance, it may be questioned whether the uses developed by them can be considered "situation-testing" in the sense that is meant by sociodramatic situation tests or psychodramatic situation tests.³ In both of the latter, the tests are constructed to evoke the spontaneity of the subjects, singly or in groups, to *draw them out*; in the German usage, there is inherent the implication that the tests are better constructed to evaluate the subject's ability to reduce his spontaneity, *hold himself in*, while he carries through routines asked of him. In fact, the German use of "situation tests" might rather be described more accurately as performance tests for which a situation was set up. They are similar to such tests in that a very narrow range within which behavior was to be displayed is set up, to diagnose the subject's ability to stay within that range; the more resourcefulness he might bring to the tests, pushing the ceilings up, so to speak, the less, it may be presumed, he "meets" the requirements. The range of the tests was bedded in the flat concreteness of common "reality" settings which had to call for stereotyping of rôle. It will be noted also that in the German tests, in each instance, the subject is either performing alone (as in the Command Series) or performing *towards* a group; he is never placed in a setting where he has opportunity to *develop a relationship between*

³ See J. L. Moreno, *Psychodrama*, Vol. 1, 1946, *The Theatre of Spontaneity*, 1947, and "Das Stegreiftheater," 1923.

himself and specific other persons, forming a group with a common goal nor in any situations specifically constructed to be meaningful to him as a particular individual.

While the German psychological work may have intended to be "wholistic" and "intuitive" the effect of the Nazi climate under which it was carried out apparently restricted the perceptions of the investigators to such an extent that what emerged was a one-layered, rigid, goal-set form of situation testing which cannot possibly be sufficient for personality assessment in our culture. Under the Nazi regime, it may very well be that the psychological climate could ill afford to encourage spontaneous expression either in its experimental program or its regime as a whole.

In contrast, the situation testing done by the O.S.S. invited the subject to meet surprise situations *in whatever way he saw fit*, giving him maximum leeway, since the "situation" was not "instructing in making a coat-hanger" or "giving a lecture on a painting" but *dealing with interpersonal relationships around problems pertinent to him as a person and to the group as a whole.*

The work of the O.S.S. maintained all of the advantages of the use of spontaneous situations as developed by Moreno with the collaboration of the writer at the New York State Training School for Girls, at Hudson. To illustrate to what extent they were able to do this, a brief description of situation-testing at Hudson is given *with phrases italicized* wherever the O.S.S. approach was identical in experimental design.

The individuals chose the situation and the rôles which they wanted to act and the partners whom they wanted to act opposite in a certain rôle, or they exchanged the rôles they had in life, *or they were placed in selected situations.* As the yardstick was *pure improvisation, the performance was a yardstick of how they might perform in life situations.* But whereas conduct in a life situation is irrevocable, here *every phase of performance is open to correction through criticism made by the other participants, the instructor, and the subject himself,* and a technique *how to differentiate attitudes which may have been at the start insufficient can be learned by the individual.* We found it advisable to *construct the situations as close as possible to the position the individual expects to assume in the community outside.* For instance, if the individual receives training in a specific vocation, she is placed in a variety of situations which might arise in this vocation.

In addition, with tireless ingenuity, the O.S.S. implemented the spirit of spontaneous-situation-testing by devising methods to develop and advance the approach for personality assessment, as the following excerpts

from their report⁴ illustrate. (Important points are italicized here but not in the report.)

... since the rôle selected for a candidate could not be placed entirely outside his sphere of interest and competence without running the risk of checking his motivation, a special rôle was invented for each man on his cover story and his postwar plans as written out for us that morning. It was comparatively easy to pair the candidates in appropriate situations. Each situation⁵ put each man into a position in which he would have to reveal the faults he was suspected of having, if such faults were present.

These tailor-made situations were created by the staff in sessions ... held on the afternoon of the day of Improvisations ... (p. 171).⁵

The candidates first had to be cast in the rôles that would be maximally revealing and that could conceivably confirm or disprove suppositions about them. This was done in a meeting that took place a few hours before Improvisations was scheduled. Since for Improvisations the class was divided into two sections only, the three or four staff teams were also divided into two groups, each to devise plots for one section. In preparation for this meeting the staff member who was to conduct Improvisations prepared a list of the cover stories invented by the candidates, as well as their postwar plans, both of which had been written out by the candidates earlier in the day. At the start of the meeting the interviewers and other team members raised questions that they wanted to have answered about each candidate. Some of these questions were quite general ... but more frequently they were rather specific, having been formulated on the basis of previous observations in the light of the particular requirements of the projected assignment. The questions might involve the candidate's handling of inferiors or superiors, his tact and resourcefulness, his proneness to guilt feelings, his tendency to blame others, or his reaction to such specific accusations as that of dishonesty or alcoholism, or his attitude toward a particular group, such as Orientals. After the questions had been defined, the creation of appropriate situations was the task of the assembled staff members, and the nature of the ensuing performances was such as to win for this meeting the nickname of Brainstorms. The problems to be solved were by no means easy: they required a simultaneous consideration of a multiplicity of factors. For each candidate both a suitable situation and a suitable partner had to be found, and the

⁴ Quoted from J. L. Moreno, *Who Shall Survive?* p. 325, 1st ed., 1934, 2nd ed. in press.

⁵ Quoted from *Assessment of Men*. Office of Strategic Services Assessment Staff, 1948.

situation had to be such as to provide an opportunity for exposing the crucial dispositions in each of the two participants. In addition, the cover stories of both had to be considered. . . . As the staff gained experience with Improvisations its members accumulated a repertoire of plots that had proved successful in the past and drew on it freely. Even with this help, however, *Brainstorms* continued to tax the staff's ingenuity and remained to the end a challenging and highly rewarding task (pp. 266-7).

Since all improvisations were different, the comparison of candidates and traits implied in rating was not feasible; furthermore, it was felt that the mere listening to each plot as it was developed by the "actors" and its subsequent discussion by the group resulted in more insight (p. 208).

. . . the whole attention of the staff members (was) directed toward one actor and then the other, in an attempt to interpret the clues to personality structure embodied in words and gestures (p. 229).

When Improvisations was first adopted an attempt was made to use the rating system, but this was soon abandoned as incongruent with the subtle and unpredictable forms of behavior exhibited under these conditions. It was striking, however, that although no formal scores could be made, there was usually good agreement among the staff members as to the nature and significance of the observed behavior. This opportunity to observe the elusive and unique qualities of each candidate's behavior without the necessity of rating it turned out to be the most valuable aspect of this technique, which, it was felt, justified the time devoted to it. The procedure brought out personality characteristics which had not appeared or had been barely discerned in other tests. Immediately after the session the staff members would meet for thirty or forty minutes to discuss the behavior of each participant and its meaning for his over-all assessment (p. 171).

We have come to feel that the emotional involvement of the improviser both in the situation and in the succeeding critique (group discussion by fellow candidates, the improvisers, director, and other staff present) is the sine qua non of a significant expression in Improvisations. Creating this involvement should be the aim of the staff's efforts. We are inclined to feel that under these conditions the individual gives a more accurate impression of his methods of dealing with others than can be obtained in any other way (p. 176).

Thus we can note that the O.S.S. psychologists neither disarded the method because of its difficulties in quantitative respects nor arbitrarily quantified it in a meaningless manner nor relegated it to an "intuitive" category, but sought by pooled team judgments to assess personality.

As Bronfenbrenner and Newcomb have pointed out, "no definitive data concerning validity or reliability are as yet available"⁶ for improvisations as a method of personality assessment. As these authors have stressed (and have made much progress towards) the development of a scale "specifically adapted to the characteristics of the improvisations method . . . has not yet been accomplished" and "must wait upon a better understanding of the dimensions of behavior elicited by the technique."

Allowing personality to be shown in full complexity in situation in progress rather than crushing it into a mold—while this is indeed a stupendous job in experimental design—would seem to students in our culture to show greater *intuitive and quantitative* sense for psychological reality. It would appear that such situation tests must test what really matters: e.g. capacity to feel along with another, to enter and dwell with him in *his* world (as if it were one's own or making it one's own for the time being), discerning what the other's needs, comprehending the other's anxieties (or joys), to show such quality of performance when the other is in turn finding fault or negatively critical, and particularly to increase the spontaneity and morale of the total group.

None of the German situation tests in any way touched such aspects of personality; instead they tested the individual for ability, for example, to keep still while he is criticized by a superior officer; they do not test him for ability when in the rôle of a superior officer to take criticism from an "inferior" and comprehend and aid the "inferior" to gain perhaps a larger view of why matters might take courses he didn't like.

In the British situation work, such ability to make contact with another person was considered of focal importance in assessment "of one of the most fundamental aspects of officer suitability, namely, the quality of the individual's social relationships."⁷ Sutherland and Fitzpatrick quote Bion's⁸ statement of the principles underlying their method of "Leaderless Groups" as follows:

The Leaderless Group Tests are intended *to display to their fullest extent those general qualities of personality that are of equal value or of equal danger whatever the duties their possessor*

⁶Urie Bronfenbrenner and Theodore M. Newcomb, "Improvisations—An Application of Psychodrama in Personality Diagnosis," *Sociatry*, I: 367-382, March, 1948, p. 376.

⁷J. D. Sutherland, Lt. Col., R.A.M.C., and G. A. Fitzpatrick, Major, R.A.M.C., "Some Approaches to Group Problems in the British Army," *Group Psychotherapy*, A Symposium, SOCIOMETRY, VIII: 443-455, Aug. and Nov., 1945, p. 447.

⁸W. R. Bion and J. Rickman, "Intra-Group Tensions in Therapy—Their Study as the Task of the Group," *The Lancet*, II: 678-681, Nov., 1943.

is engaged in. These qualities are displayed in the interpersonal relationships. . . . The function of these general qualities that are observed is best described by the psychiatrist's use of the word "contact," that is to say, the *capacity for mature, independent social relationships*.

From the beginnings of situation tests in this country, we meant that the subject is given opportunity to show, to portray what he might be unable (or perhaps not even know himself to be capable of) to disclose by written or interview or other media, to demonstrate his individualized styles of behavior by having an appropriate situational framework within which his personality *could get into action*. Illustrations of this method are given in the motion picture "Spontaneity Tests and Spontaneity Training" presented by Moreno and the writer in 1935 in connection with a paper on "Spontaneity Training,"⁹ at the annual meeting of the American Psychiatric Association. In each of the situations the subject was given opportunity to build up a relationship to another individual and in each a surprise element was an inherent part of these tests in order to aid the individual (as well as to oblige him) to draw upon his spontaneous resources. This is mentioned here because the names "spontaneity tests" and "spontaneity training" imply a respect for the individual and his potentialities of expression, *whether or not* he has shown certain capacities in previous performance or even in life itself.

In connection with the contrasts in form situation tests have taken since then in the several countries, it is of interest further that it was the Western nations, the United States and Great Britain¹⁰ who took the initiative in applying sociometric approaches which they introduced as early as 1941 in the study of military problems of selection of leaders. Germany is not known to have done any, and work in the French Army may be studied in the present issue.¹¹

This is of interest because in both sociometric work and sociodramatic or psychodramatic, *spontaneity* and *choice* have a central position. In sociometric work, the subject shows *whatever choice behavior he cares to show* in relation to the criterion for which he is selecting or discarding as

⁹ J. L. Moreno and Helen Jennings, "Spontaneity Training, A Method of Personality Development," *Sociometric Review*, pp. 17-25, 1936; this article also is pp. 130-139 in J. L. Moreno, *Psychodrama*, Vol. 1, 1946.

¹⁰ Sutherland and Fitzpatrick, *op. cit.*; Cecil A. Gibb, "Principles and Traits of Leadership," *Journal of Abnormal and Social Psychology*, 42: 267-284, July, 1947.

¹¹ Paul H. Maucorps, "A Sociometric Inquiry in the French Army," *SOCIOMETRY*, XII: No. 1-2, February-May, 1949.

sociates. In the case of sociodramatic work, the subject shows *whatever choice of rôles he cares to show* in relation to the situation presented; *he builds in interaction with his partner or partners the form the rôle shall have*; it is not dictated to him by the director or investigator. The director's job is *to aid him to warm up to the making of the rôle*. And the problem is, in either sociometric or situation testing of a psychodramatic sort "to construct the test in such a manner that it is itself a motive, an incentive, a purpose, primarily *for the subject*, instead of for the tester."¹² And any sociometric study, whether inside or outside the army, requires an atmosphere within which the individual *feels free* to express how he feels about other people with whom he is or may become associated.

As any country shifts from democratic emphases in its social and political life to more and more authoritarian atmosphere and practice, it is natural that the type of tests which its official psychologists may be permitted to use will reflect such influence. Similarly, the kind of "high morale" between officer and soldier which Ansbacher speaks of can come to be an induced, indoctrinated morale which is nevertheless genuinely felt by the subject; but it may be equally natural also that in such a climate there will not be room for or interest in techniques which subsume a large value for the individual *per se*, his feelings, judgments, choices, decisions, or for the group *per se*, its initiative and decisions. Similarly, it is also understandable that the German policy would, as Ansbacher reports, be to keep soldiers together, shifting them as little as possible and that this would be a factor in the "high morale." At the same time it is understandable that this was not done by ourselves or most of our Allies, since in more spontaneous democratic atmospheres, faith in the individual's ability to form relationships anew and to meet new situations may be almost recklessly taken for granted. In any case, the Western powers relied more thoroughly upon the individual and the small group to rise up to the endlessly changing occasions and did not institute any such, from our view, paternalized and mechanized technique of showing "love" for him as Nazi military policy dictated in assigning the officer the duty of sending him birthday cards routinely. To the "stay put" policy, the German authorities added, one might say, techniques for denuding social relationships of spontaneity, or better said, for artificially creating social relationships—perhaps symbolic-social-relationships between the symbol-officer and the symbol-soldier. And this approach apparently did fit in with and was ideally suited

¹² J. L. Moreno, *Who Shall Survive?*, pp. 14-15, 1st ed., 1934, 2nd ed. in press.

to a highly authoritarian regime. This inflexibility of German military psychologists is by no means characteristic for German culture in general; in the pre-nazi era some of the most astonishing efforts towards organized social creativity have come from Germany. After all Moreno's "Das Stegrief-Theater," the book which pioneered Situational Tests and Experiments was written and published in Germany.

The extent to which a scientist reacts creatively to an idea, the extent to which he shows himself able to further its usefulness and its interpretation, may be a measure of the extent to which he is "attune to" or "ready for" that idea, so that its horizons spread before him as he works with it. This has been surely the case with much of the work along sociometric lines of the British and American military groups, perhaps stemming from the relative advantages of their psychological climate. Moreover, the French work presented by Maucorps represents an intensive effort to give full chance to sociometric processes, perhaps reflecting a more urgent concern with human potentiality.

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SOCIOMETRY

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I

The last book which reached me from the United States shortly before the outbreak of the war was Dr. Moreno's "Who Shall Survive?" It was already five to six years after its appearance but because of various external circumstances I did not receive it until 1939 or 1940. I still remember that the title irritated me "Who Shall Survive?", from a physician! Surely he was some eugenically oriented doctor who recommended the euthanasia of many poor people and who tried to justify it. I did not want any part in this. Unfortunately I put the book away without even paying attention to the sub-title; it would have made me think and look into it, "A New Approach to the Problem of Human Interrelations". That was exactly my very own theme! But I did not pay any attention to it. It was a happy accident that Moreno's book, also externally most impressive, survived the war in my cellar together with other printed matter. In 1945 I picked it from among the junk. One year later the first foreign books and magazines began to arrive after a long pause. In them I frequently encountered, in connection with the name of Moreno, the new method sociometry which in America had been applied in many places and partly criticized. Then I read the book thoroughly and learned not only that the work of this psychiatrist has a misleading title—perhaps chosen by the publisher—but the voluminous work of 440 pages has only at its very end a chapter entitled "Who Shall Survive?" which is limited to seven pages. But this side stepping into the ethico-political sphere is inorganic and totally superfluous for the book, at least it is erroneous in the formulation of the title. Of essence to the book is something else: it is rare that the "system of relations" has received such a strong support and confirmation in its basic thoughts as in sociometry, this creation of the physician Moreno. Of course this statement needs further interpretation and a more precise analysis of its meaning. After reading the book I had not yet turned away from the system of relations and become a sociometrist but I believe that this method has a great significance for the progress of the science of social processes. There are in the basic and in the end portions of Moreno's book parts which agree almost literally with my own attempted formulations. We are entirely in agreement with the concept that sociology is basically a system

of relations between men, that the social processes which are created by these relations are those of association and dissociation and that ultimately all sorts of forms are aggregates of the relations so formed. Moreno postulates a "law of social gravity" as underlying his investigations which he recognizes, similar to our point of view, in the alternation of attractions and repulsions. The famous psychiatrist William A. White, who wrote the preface to Moreno's book compares these events with the constant change between the systolic and diastolic beats of the heart.

However, after such considerable agreement there is some disagreement with Moreno; the processes of approach and of withdrawal appear to be for Moreno of an exclusively emotional character. They take place in the psyche of men; the realm of psychology is not abandoned. All his studies and postulates imply that the social and the psychic are one and the same. In this sense one may say that the realm of subjectivity is never given up by him. But the use of the word subjective here should not imply that Moreno is limited in his studies by a personal involvement; it is just the opposite. His aim is directed towards the most exact objectification of observations; but the object of these operations is the realm of the human psyche exclusively. This is so perhaps because he is a psychiatrist, a practical psychologist and physician. We too, in our "system of relations" do not neglect the psychological processes; but their penetration is one of several tasks so that we can recognize that realm of existence which is crucial; the social one which lies *between* men and not *within* them. Particularly when one, as Moreno, like ourselves, emphasizes the significance of the little word "between" one should not permit it to vanish into a "within". The danger of onesidedness of the practical application of the totalistic-psychological upon the social dimension will be further elaborated later. It seems to me the error is not at all in the socio-psychological studies themselves; on the contrary, they are irreplaceable for the penetration of *one* factor of interpersonal existence and they represent great progress of our science; but this one factor does not represent the whole of the social; it requires additional studies concerned with the external, the extra-psychic factors and their coordination in a purposeful context of society.

If we do not believe that we can follow Moreno in this, we may, however, be ready to follow his general evaluations entirely. When it comes to the question which fascinates him from an ethico-political point of view, and which gives to his studies the forward driving force, he is doubtful as to the value of eugenic experiments. For him, too, the problem of freedom

ranks first. He wants to teach a technique of freedom with the goal of balancing up the *spontaneous* social forces (spontaneity is his chief objective) with the greatest possible harmony and unity. This is also our practical goal.

II

When we try to reproduce here the chief content of Moreno's work, we may best start with a statement from White's foreword to it, one which is also an axiom of our system of relations: "Social groups are not a sum of individuals but a sum of relations which exist between them". Moreno aims to develop a technique by means of which to classify the social processes. It should lead particularly to the results of bringing together such individuals whose interaction promises harmony so that the group thus formed may operate as effectively as possible and with as few disturbances as possible. The working out of an appropriate "technique" is the foremost aim.

To a physician and humanitarian as Moreno, therapy is of the greatest interest. He seeks to develop a science of practical social treatment and to apply theoretical discoveries to it. Sociometry is not to be considered as much a theory of sociology as a method of factual observation. Herein too, he coincides entirely with the system of relations whose more extensive theoretical foundation could aid sociometry in its operations and which indeed may further reinforce its rather too rapidly developed theoretical framework. As a compensation, however, sociometry gives us a widely tested experience of practical application which we in Germany have failed to attain due to the force of external circumstances.

In his historical background the author delineates the lines of evolution from Spencer to Bergson who perfected the theory of Spencer which remained too much on the external surface of things by emphasizing the inner experience; Bergson, however, did not provide us with a psychology of the creative in his "creative evolution". Freud attempted to fill this gap; but his therapy consisted in turning the patient into his past (*à la recherche du temps perdu*) instead of developing the direction of spontaneity into the future. Bernheim's Nancy school has tried to develop the new thought further and to use the influence which one person exercises over the other therapeutically. The modern Russians exaggerate this tendency towards "socialization" by turning the individual into a mere symbol. The Le-Play school does not recognize but geographic-industrial relations and neglects the inner unfoldment of men. Marx is entirely economist. Galton's eugenics does not recognize but breeding.

This is the ancestry of sociometry as Moreno sees it himself. One notices from it that he is limited to the circle of publications which are related to the field of psychiatry and that it takes little notice of the real sociological literature. The latter, however, does not counteract his neglect by non-attention. In the last thirteen years sociologists in America, England, and France have abundantly given attention to Moreno's methods; we in Germany have now the task to make good. A gain of this orientation, it appears to me, lies in the fact that it contradicts and does away with the widely spread German superstition that it is not possible to make experiments in the social sphere. This superstition has considerably hindered genuine research and fed the tendency towards speculation.

But what kind of therapeutic procedure has Moreno derived from sociometry? For him it is a method in the framework of a science which he calls *socionomy* and which he defines as follows (in a terminology which is not entirely a happy choice and which shows that he is not very conversant with the tradition of sociology): "*Socionomy is a science which is concerned with the psychological properties of populations and with the communal problems which these properties produce*" (p. 10). The complex relationships of the various groups, their operations and the way in which these operations influence the welfare of the community are its areas of research. Sociometry is, within socionomy, that branch which is concerned with the mathematical exploration of psychological properties of populations. It consists of "the experimental technique of socionomy and it attains its results through the application of quantitative methods. It tries especially to attain the quantities and the expansion of psychological currents which transverse populations" (p. 11). From the point of view of the system of relationships the tendency towards quantification is very welcome. It appears to me as the truly scientific objective to resolve the qualitative content of social processes as much as possible and without distortion into quantitative differences within the same dimension of observation. After all, the kernel of all science is mathematics. But when I dared merely to indicate that the social processes may be quantified by means of definite operations I was severely censored by the apostles of the approach of "understanding" ("verstehenden"). And I realize now that I permitted them to intimidate me too much. The naive daring of the American explorer of nature has actually presented in numerous, most expressive, graphic charts (sociograms) that which I envisioned as a part of the task of the social "planetarium" and of which I had the courage to remind myself at the Eighth Sociological Congress.

Of course, for the execution of such social research a great staff of collaborators and considerable financial sponsoring is required, besides all sorts of other assistance which we failed to obtain in the past and which is denied us even more today. Otherwise we would have developed in Germany in the last thirty years a parallel technique to the sociometric one. Thus, however, we enjoy without envy the fact that sociometry has been given to more fortunate America. The most important thing is after all that that which is needed occurs; it is secondary who does it.

Moreno calls the instrument by means of which the degree of association in social processes is measured the sociometric test. It is put into operation by giving a person the "possibility of choosing the associates in the groups in which he participates". It was applied, up to the time of the appearance of the book, in home, work and school groups. It was meant to expose the inner relationship which is considered as the true relationship. Moreno writes significantly: the test makes clear that the underlying psychological structure deviates considerably from the official social manifestations, that social aggregates change in direct relation with the age level of the participants, that the various criteria (that is, the points of view according to which the groupings take place) at times produce different groupings of the same individuals, at times the same groupings, that groups of varying function (for instance, home and work groups) tend towards different structures, that people, if they could, would group themselves differently and that these self determining groupings and functions which they assume have a decisive influence upon the attitude of every individual as well as upon the group as a whole, and that the groupings which are imposed by an authority are a possible source of conflicts. It became clear that chosen relationships and actual relationships often differ widely from one another and that the position of a person cannot be fully realized and presented if not all individuals and all groups to which they are drawn are included (p. 11).

The sociometric test was further developed into the spontaneity test. Through it a person is placed in a special situation which provokes specific emotional reactions (like fear, anger and so forth). These situations are called "impromptu states". The course of mimetic and verbal expression occurring during the test was recorded and it showed characteristic manifestations of the individual mode of action through the given situation and in the attitude of those individuals who were placed opposite him in the experimental situation (p. 14).

It is essential for the procedure chosen in both tests that the person

to be tested *participates in the experiment through the free choice of his partner.*

These experiments were started with groups of children and continued with pupils between fourteen and eighteen years, but were particularly introduced in grand style in the New York State Training School for Girls at Hudson, New York (505 persons). First the distances in the horizontal structure was studied, and also freely chosen relations to neighbors (the same home, the same workshop, etc.); the vertical differentiation followed, that is, the pointing out of specific persons who form a central focus of influence and association for others who attach themselves to them (more or less in a subordinate way). In all the various groups of children and adolescents the judgment of the teachers and housemothers was considered and comparisons made with the decisions of the subjects. In the construction of the test not only the difference in age but also the relationship between the sexes and the cleavages in the group provoked by sexual phenomena played a role. In addition the racial differences, in particular the position of the negroes and the negro to the white, was explored.

On the basis of questioning, repeated from time to time in order to determine the curve of development, it was particularly ascertained whom the person questioned wished as an associate and why; further, attention was given to the one who was chosen and particularly to the one who remained unchosen and why this was the case.

The interpretation of a long series of a chain of tests, one following the other, led not only to an explanation of the proximity in a specific point in time but also to the disclosure of important statements as to the direction (the dynamic) of the social processes. In this manner it was observed that with increased age and with the growing cohesion of the group the number of unchosen ones decreased, the number of pair formation increased, that chains of relations developed and that the number of triangular structures grew. In analogy to the biogenetic law Moreno arrived at the sociogenetic law: "the highest forms of social organization developed from simple ones" (p. 65). "Societies of children may indicate how primitive societies would develop if we could repeat them today" (p. 66). (I am not certain whether societies of children are more primitive than the choice groups of adults.)

It is too bad that I am not able to give a demonstration of the overwhelming but also too alluring fulness of observations of the Hudson girls through duplication of one or the other of Moreno's many sociograms.

However, the results of his researches become the more questionable the more Moreno permits his great enthusiasm and strong imagination to stray from the real groups (in the sense of the system of relations) to the institution or even when he transcends from the smaller to the larger group formations. He tries to build ever larger and more universal societies upon his observation of attraction and repulsion. He puts before his human material evermore, ever more complicated and ever more frequent questions. Finally he arrives at what he calls a "psychological geography", that is, the spacial structure of entire settlements, based on his questioning.

One must begin to doubt in sociometric procedures when Moreno lured by his preference to vertical differentiation begins to move from the mere statement of observations to a therapeutic device, "assignment therapy", that is, a change of position in the group by means of which his chief principle, that of spontaneity, is interfered with. It is first determined that a person shows maladjustment to his own group; then he is assigned to another group. An act of coercion interrupts the policy of self determination. However, this "assignment" is to take place at the right psychological moment, not too early and not too late (p. 305). Then, after this transplantation of the individual the work with sociometric procedure continues.

The "sociometric planing of society" becomes more and more widespread for Moreno. Finally he develops "population tests". With his tests he wants to regulate migrations and settlements. Entire new communities are to be built on the foundations of the existing attractions and repulsions wherein the leading hand which arranged for the adjustments participates wholeheartedly.

He coins also, in order to solve this task, two new terms. I doubt however whether they contribute anything towards clarification. I must mention them here but I would like to warn against their usage. Moreno operates with the terms "social atom" and "tele". The first one aims to represent the smallest constellation of psychological relations which one should conceive of as the individual cells of the social universe. It is certain that one must work out the elementary relations of one individual to another; but is it possible to describe processes as atoms? "Tele" is conceived as a mode of feeling which projects at a distance, and penetrates to influence also beyond the immediate partner of a social process, towards an indefinitely extending circle. Instead of "tele", a word which has a somewhat mystic connotation, I would suggest "influence at a distance", and instead of the "social atom", I would suggest "elementary relationship".

III

Herewith, I will try to make some critical comments. Moreno mentions occasionally the arguments which one could raise against his procedures and tries to disprove them—and not without success. He compares his method with classifications of anthropologists, and asserts that his procedure is in sharp contrast to theirs (p. 80). He refers especially to Jung and Kretschmer. Towards them the sociologists will agree with Moreno when he criticizes the approaches of these men; because he (Moreno) does not deal with an individual who is separated from the "sociodynamic situation"; but he appears to him in constant relationship to other individuals to whom he is attracted or who reject him. This too, is indeed not the point of separation between Moreno and ourselves.

My doubt refers to two other points which Moreno has left out or which he has discussed only superficially: 1) In order to understand the group process and to reconstruct, is it enough if one knows the "total sum of attractions and repulsions"?—2) Even if it could be understood from this purely objective point of view and if a reconstruction could be made on this basis alone, is it possible to assess the real, inner relations towards and away from, through mere questioning of the participant?

In answer to point 1: it could appear contradictory that I who have emphatically stressed association and dissociation as the fundamental forms of all interhuman phenomena do not now consider the presentation of these two polar forms as sufficient explanation for the group process. However, there is considerable difference between the generalized reduction of concrete social processes to last recognizable fundamental forms and an exhaustive conception of all contributing factors of a practical single case. The individually experienced events within the social space are interwoven in a network of relations, particularly in larger aggregates; they have *functions, tasks, goals and purposes in this framework* and these forces often exert a much stronger influence upon the composition and the flow of the social processes than the temporary position or negative attitude of the partner in the process. In the last analysis even these social goal propositions consist of integrations and differentiations; but in the concrete single case they confront the participating individual as norms, imperatives, as objective restraints. There are—using an expression of Florian Znaniecki—axionormative orders in the social world. They cannot be ignored; they are changeable, they can be altered in the direction of the ideal of the self determined nature of the participating individual; but they exert a controllable influence. Had Moreno been more of a sociologist or even

jurist and politician and less of a psychologist he would have been, just like many thousands of scientists before him, too much perhaps in the direction of research which emphasizes the norms too much and spontaneity too little.

It is not possible to explain through the interplay of attraction and repulsion the processes taking place in large groups, not to mention social institutions, and to make conclusions on this basis alone. Already the school communities in which Moreno's tests were used and whose sociograms he presents, indicate how complicated even these simple schemes become when they deal with groups consisting of more than about 100 individuals. It is certain that such groups and the circle of individuals treated here are particularly suited for such experiments. The college fraternities which McLennan Vreeland has analyzed too, as typical choice groups are valuable areas of study. But how is it with companies in the army, with administration, with industrial plants, etc.?

For heaven's sake, this should not at all imply that one should leave out sociometric experiments; but the task is: to examine how the two principles, *the "axionormative" and the "sociometric" rules of self determination and the objective norms and schemes could be combined* and how their relationship to one another could be further developed in practice so that spontaneity replaces the norm more and more. But as things now stand scientific recognition requires not only an exploration of positive and negative attitudes of one individual towards another but also a thoroughgoing clarification of the prevailing (axionormative) orders—which themselves should be experimentally examined. *The social processes are products of both forces*; they are actions, not only attitudes. They should be analyzed and systematized according to the scheme of human relations; in the two categories "attitude" and "situation" are contained the consideration of the inner and the outer influences.

In answer to point 2: But even if one could rebuild today the social life of man upon the two (psychological) forces one could not really expect that their direction and intensity as well as the relationship of attraction and repulsion to one another could be sufficiently expressed by means of these tests.

The European is again and again astounded by what confidence is placed in America upon the results of direct questioning. About this one could say a great deal from the point of view of national psychology. Very many Americans believe in the authority of answers to questions as if it were an oracle. It indicates a great deal of the assumption that

people in the United States are in general more open, unrestrained and naive than most people in Europe. It is possible that they do not lie as much as they do here. In any case, in peculiar conformity with the principle of democracy, there seems to flourish in the States a faith in the factual correctness of everyone's subjective judgments. But now Moreno wants to build a whole social world on the basis of such test questions! I admit that the strongest impression I have gained from his book are the many pages in which he quotes literally the responses of the girls in Hudson; they are to a large extent more deliberate and more revealing than one could find in Germany. Just the same, even if one would assume that most of them do not lie, that they do not try to ingratiate themselves or do not poke fun of it, that they do not take revenge or do not try to distort the aim of the test—can they always give correct answers to such delicate questions? Does not Strindberg's saying apply here more than elsewhere: "Who knows what one wants?" One day these young girls are presented with a piece of paper with a few explanations, containing: "Write down whom you would like first place, second place, third place . . . look around and make up your minds. Remember that the one you choose will probably be assigned to live with you in the same house" (p. 13-14). There may be cases in which the answers are easy and where a retest confirms the answers. But how many of such answers may be repented a few hours later? How often may the mood of the moment guide the pen? How often may the individual questioned not be sufficiently clear about his choice and perhaps still give an answer out of fear?

But I do not want to continue this somewhat trivial argumentation. One can imagine how errors may accumulate which are embedded in the complicated sociograms of whole groups. But all these comments to both points above should not have the aim of putting aside Moreno's sociometry as a useless method of research. This would be a most unproductive and unjust criticism. Just the opposite. It would be very necessary finally to begin work also here with spontaneity and sociometric tests. Only they are not instruments of a universal science and particularly not a universal remedy for creating optimal organization of groups. It is a process which requires supplementation by others and which should receive an increasing place in the sciences of organization and practice. Sociometry is especially of importance in behalf of the smaller groups. Their problems are more easily solvable by voluntary groups, more complicated by involuntary groups. But these instruments should penetrate particularly in the realm of the involuntary groups. Our science of relations must certainly make use of such tests.

IV

Unfortunately, at this time of writing only Moreno's "Who Shall Survive?" is available. I could not consider the rest of his writings in this paper. There is a journal, SOCIOMETRY, which has already published eight volumes. According to references of Helen H. Jennings—who has collaborated with Moreno on the researches reviewed here—he has written explanatory contributions in the first and the fourth volume. For the sociologist the following are probably particularly important: "Sociometry in Relation to Other Social Sciences" (Soc. Vol. 1, 1937) and "Foundations of Sociometry", (Socio. Vol. v. 1941). Besides these articles in their journal Moreno and Jennings' "Sociometric Methods of Grouping and Regrouping", in Sociometry Monograph No. 7, 1944, Beacon House, appear to be important.

The *Cahiers Internationaux de Sociologie* which Georges Gurvitch publishes contains a brilliant paper by Florian Znaniecki, "Sociometry et Sociologie". He considers sociometry as an important stage in our science. Sociology occupied itself up to now too onesidedly with the axionormative order although sociologists like Tarde, Fouillee, Cooley, Simml and von Wiese had recognized the onesidedness of this view, "mais leurs efforts pout introduire une autre methode furent vains" (p. 108). This is a harsh judgment but I am not without hope that the wholesale judgment by Znaniecki rests upon too little knowledge of the efforts of the "Beziehungslehre"; Because exactly that step whose neglect he is pointing out has been made by us, that is, the consideration of the reciprocity in attitude and actions. But that is not the object of this investigation; however, we are glad to say plainly that Znaniecki's demand: "Tot ou tard, la gradation quantitative doit etre substituee a la variation qualitative" (p. 109), entirely agrees with our aim. But also to him Moreno's sociometry does not appear quite sufficient because it emphasizes too much the spontaneous two-way relations and neglects institutional aspects. Sociometry must extend itself from the research of attitudes to the research of actions. This is in entire agreement with our own rule; social processes are actions. Znaniecki points out that up to now there had not been in the social sciences any experimental procedures in which the ones who are the object of the research also actively take part in it. Here-with indeed Znaniecki shows the way in which we have to go and which also the *Beziehungslehre* has not been able to pursue.

An important emphasis and a short interpretation of the sociometric procedure one finds in Henrik F. Infield's "Cooperative Living in Palestine"

(1946). He describes in the book the Jewish Kvutzah, a full-fledged cooperative. When he analyzed the kvutzah he did not yet know Moreno's book and could not use his tests. Otherwise he would have made, as he says, a very useful application of the measures of attractions and repulsions. He summarizes both psychic processes as "We-feeling", ("Wirgefuehl") and points out that the sociometric test procedure, its graphic representations is of practical value for cooperatives (110-111).

These are the traces of sociometry which I was able to follow up to this time. There are many more. In view of the barbarism of the forced mass emigrations of entire populations, of the mechanical migrations of Europe of today, the emphasis and development of a technique of self determination of groups, sounds like an incredible irony. A practically unbridgable gap arises between that procedure which sponsors the freedom of the person and the brutal practice of force which knows of nothing indifferntiated quantities of involuntary men. Particularly for these ethical-political reasons should the sociologist do everything in his power, to provide sociometry with universal recognition. Although it may not be the complete procedure necessary in order to organize social aggregates adequately this should not reduce its just claim to cooperate in it.

V

But besides the special social-ethical importance of sociometry there is a decisive universal desire towards a measurement of social events which exists theoretically and practically in equal intensity. It is characteristic for sociometry that it strives to use the means of measurement towards the liberation of men and not towards his dependence. It refers to a fundamental question of all social sciences which I have pointed out emphatically as decisive long ago, which I have particularly tried to underline in "Homo Sum" and explained further in the "Ethic". In the sciences of men there is a tendency to oppose one principle with another principle and to think and judge in antitheses. The "either-or" governs particularly that part of the sciences which puts up categorical imperatives. Especially practical men in the realm of productivity have the tendency either to pursue a goal onesidedly or else very few aims. But this tendency towards a single track of the social world which does not exist in reality forms the greatest and most consequential error one can permit. At no time has a single principle absolute correctness—even if it appears to be the most perfectly ethical principle; the curve always reaches its validity and conclusiveness only up to a certain point; already before this do they

weaken each other constantly if an optimum is transcended. In that point the curve crosses the line of another principle; from here on only the connection of both alone has validity. No principle is for all times and for all stages absolutely true or false, this is only the case up to a certain degree. The decisive question in sociology and social-ethics is not: what alone should have value? *But to what extent* (up to which degree of intensity) can it command authority in a network of requirements? No matter how many seeds of truth it may contain, it contains always sources of mistakes. It requires the complementing mixture of truth germs which are contained in the opposite of in similar principles. In face of this criss-cross cluster of ideas, interests and norms, measurement is necessary. If one recognizes as the central task the answer to the question: in what degree, up to which point?, then the consequence is that one has to find this point and thus to quantify it and measure it. For instance, it is false to find only freedom or only dependence or to demand only dependence *or* only autonomy, only altruism *or* only self interest. What must be explored is the mixture between the two, the polar structure of the antithesis, whose restriction of both principles exists and must be demanded. These are formally considered tasks of measurement. In this broader sense of the word we consider sociometry as a method, if it is applied consequently and in the most comprehensive way possible would raise our science from the position of social scientific astrology to astronomy.

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CONCEPT, TESTS, AND ENERGY OF SPONTANEITY-CREATIVITY

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1. CONCEPT AND TESTS OF SPONTANEITY-CREATIVITY

Because I find a great deal of creativity in Dr. J. L. Moreno's theories of creativity-spontaneity, I should like to discuss in this paper two basic points of these theories that appear to me in need of further elucidation. The first of these points is *the very concept of spontaneity-creativity*. Dr. Moreno gives us an ingenious analysis of creativity-spontaneity, its source, its nature, its functions, and the psychodramatic tests of these "conditions" and the technique of training in spontaneity-creativity.

In his treatment of both concepts, however, a sort of ambiguity runs throughout all the works of Dr. Moreno. On the one hand, *spontaneity* is defined as "a response of an individual to a new situation and the new response to an old situation," as an impromptu response to a surprise situation and a surprising response to an old situation;¹ as "the factor animating all psychic phenomena to appear new, fresh, and flexible," as the ability of an organism "to sustain a flexible state more or less permanently," as a "continuous *statu nascendi*,"² a perennial "deconserved" attitude, acting on the spur of the *moment*. In this sense spontaneity means effortless, uninhibited, somewhat unexpected, and in this sense impulsive ("warmed up") extroversial actionality, a sort of *alter ego* of L. Trotzky's "perennial revolution." In conformity with this concept of spontaneity are Moreno's spontaneity tests and spontaneity training.

On the other hand, we are told that this incessant being on the move is not enough to give us a genuine spontaneous activity. To be really spontaneous and not merely "pathologically" or "rampantly" spontaneous an action must be "*an adequate response to the situation*."³ Genuine spontaneity is not a chance response, however flexible and uninhibited.⁴ Likewise it is not an automatic reflex or instinctive response. It is "a readiness of the subject to respond as required."⁵ Spontaneity

¹ J. L. Moreno, *Psychodrama* (New York, 1946), Vol. I, pp. 50 ff., 102, 130, *et passim*.

² *The Words of the Father* (New York, 1941), p. 166, 174 *et passim*.

³ *Psychodrama*, pp. 50, 134.

⁴ *Ibid.*, p. 9.

⁵ *Ibid.*, pp. 111, 122.

does not mean a disorderly, emotional, impulsive, or uncontrolled activity, however new and surprising; on the contrary, in its own way, it is an activity "of free will," highly controlled, closely related to thought; it manifests itself by a person's being at rest as much as being in action.⁶ Persons tested on a psychodramatic stage can warm themselves up with equal ease and exhibit an equal flexibility of actions, but their genuine spontaneity is rated differently, depending upon the *adequacy* of their responses to the "hurdles" presented. "If a subject fails to meet an emergency *adequately*, he is counted out."⁷ Genuine spontaneity "energizes and unites the self." "When the functions of spontaneity are left undirected, they bring about a disunity of the self and a dismemberment of the cultural environment."⁸ Positively, a genuine spontaneity manifests itself in four main forms: in dramatizing the routine, old responses; in creating new responses; in originality; and in the adequacy of response.⁹

The above can be summed up as follows. There are many forms of spontaneity as exhibited in the overt actions of persons: instinctive-reflexological-automatic, "chance," "pathological," "rampant," "disorderly," and "uncreative" spontaneities. Of these numerous forms the genuine, or creative, spontaneity is only one, much rarer, and quite specific form, which responds adequately, which reacts as "required," which energizes and unites the self, which is creative, adequately original, which manifests itself in a very intense overt activity as well as in a motionless state at rest, showing no external signs of an actional "warming-up process."

If this summary of Moreno's conception of spontaneity is accurate, one can readily see that these qualifications and specifications of genuine spontaneity largely cancel out his general characteristics of spontaneity actions and impair somewhat the adequacy of his psychodramatic tests of the S-factor. A person on a psychodramatic stage may not react to the surprise situation (may not "warm up") by any overt action, in contrast to a person who "warms up" easily and who shows the most energetic overt activity. Yet a competent judge, *following the specifications of genuine spontaneity*, is not obliged to "count out" the passive person and to credit the busybody with real spontaneity: the apparent passivity of the first as well as the agitation of the second may be equally *inadequate re-*

⁶ Moreno, *op. cit.*, pp. 111 ff., 123 ff., 130 ff.

⁷ *Ibid.*, pp. 94 ff.

⁸ *Ibid.*, p. 101.

⁹ *Ibid.*, pp. 89 ff.

sponses to the situation. Nay, more. The "doing nothing" of the first may be a more adequate response to the situation than the "being busy doing nothing" of the second: taking time to find out an adequate response on the part of the former may be a more adequate response than the blind agitation of the second. Likewise, the mere *novelty* of the response to an old situation or some sort of agitated response to the new situation is not necessarily more spontaneous than an old tested response. A novel response that $2 + 2 = 7$ or the responses of many insane persons are frequently more "original," "new," and "surprising" than the "conserved" response $2 + 2 = 4$ or the responses of normal or even extra-ordinarily creative persons. Since the novelty of response of the insane is mostly inadequate, and since the "conserved" and tested response of normal persons is often more adequate, the mere novelty of agitated response is not a genuinely spontaneous action.

The same is true of "flexibility," "deconserved" response, and momentary response on the spur of the moment as criteria of genuinely spontaneous actions. "Good mixers," "energetic go-getters," "cynically flexible adapters changing their convictions and standards according to circumstances," persons with Pareto's "residue of combinations" vs. persons with "the residue of the persistence of the aggregate," agitated devotees of the "do something" "on the spur of the moment" (regardless of whether their doing is adequate), are not necessarily more endowed with the genuine S-factor than the "introvert poor mixers," unflexible partisans of certain standards, values, or creeds; poor "go-getters" or recluses like the hermit St. Anthony, creative "poor mixers" like Beethoven, lonely souls like Pascal, "nonsocial" geniuses like Isaac Newton, or inflexible devotees of leading religious, scientific, ethical, and other values. The flexibility and momentary responses ("warming up") of the first type of persons are not necessarily more creative or a more adequate response than inflexible and "conserved" responses of the second type. The principle of *adequacy of response and of its creativity* is something fairly neutral to the flexibility-inflexibility, "conserved-deconserved," "agitated action and nonaction on the spur of the moment" and other "symptoms" of genuine S-behavior. In line with my "conserved" skeptical attitude toward almost all the mechanical tests in the psychosocial sciences,—intelligence tests, mental tests, the Rorschach test, psychoanalytical tests, aptitude tests, Zuordnung tests, thematic apperception tests, and so on, I am skeptical also concerning Moreno's tests of the S-factor. His criterion of the *adequacy* of response rules out most of his other symptoms of the S-factor. Only in so far as psychodra-

matic tests of the S-factor exhibit the *adequacy* of the response (when we have a certain and unquestionable criterion of the adequacy and not a mere "evaluation of some experts"); only when one is tested for this adequacy many times and given all the time needed to develop his real spontaneity—only thus far are these tests reliable indices of genuine spontaneity. Other symptoms, such as flexibility, novelty, dramatization, easy "warming up," and agitated activity, are only subsidiary and unreliable proofs of creative spontaneity. By themselves these characteristics are insufficient to prove or to disprove the S-factor in the individuals tested.

These considerations are applicable also to Moreno's creativity and its tests. Creativity is defined by him largely in terms of his spontaneity. "God (as the pure and supreme Creator, P. S.) is spontaneity. Charity—what would it be but a dead shell, were it not spontaneous? . . . And the love of God Himself—does it not flow spontaneously from Him in the moment of need? The rate of their spontaneity determines the rise and fall of nations. Hence the commandment is: Be spontaneous." "God is the Being who can summon the maximum of spontaneity, and He is the Being whose spontaneity has become all creativity." "It is spontaneity which enhances creativity."¹⁰ "The first character of the creative act is its spontaneity; the second character is a feeling of surprise, of the unexpected. The third character is its unreality, which is bent upon changing the reality within which it rises."¹¹ In brief, the genuine spontaneity and genuine creativity are almost identical with each other in Moreno's conception. The only difference is that the S-factor is ascribed the rôle of a source or of a parent of the C-factor. On the basis of the above criticism of spontaneity this "identity" of creativity with spontaneity warrants the following conclusions: (1) not every form of spontaneity ("reflexological," "pathological," "rampant," "inadequate," etc.) is an evidence of creativity but only the genuine *adequate* form of spontaneity: (2) The incidental "fellow travelers" of genuine spontaneity, such as an easy, overt "warming up" vs. a slow and difficult onset; rampant overt activity vs. inflexibility; "unconserved" vs. "conserved" responses; novelty and originality of *any* kind vs. "traditional" but adequate response—these and other characteristics, displayed either on the stage of actual life or on that of the psychodramatic theater, can in no way be taken as sufficient evidence of creativity. Only when we observe an *adequate* response to the situation or task and

¹⁰ *The Words of the Father*, pp. xviii, 165, et passim.

¹¹ *Psychodrama*, pp. 9, 35, et passim.

only when this adequacy itself is the highest adequacy of many possible, only then we are entitled to contend that the respective activities of persons are genuinely creative (regardless of whether they are "novel," flexible," or performed "on the spur of the moment.")

Hence we have to regard the psychodramatic tests of creativity with the same caution as we regard various other mental tests, aptitude tests, the Rorschach test, or public opinion polls. By their very nature Moreno's psychodramatic tests of creativity test perhaps not so much the *adequacy of response activities* to a given task as the presence or absence of the incidental "fellow travelers" of creativity aforementioned. The character of the psychodramatic tests of spontaneity-creativity is biased in favor of flexibility and against inflexibility (regardless of adequacy); in favor of the "original" and "novel" "two and two equal seven" and against the "conserved" "two and two equal four;" in favor of a spontaneous "boogi-woogi" music and against a beautiful performance of Beethoven's "conserved" *Ninth Symphony*. It gives a creative premium to an energetic, rapid, impulsive, overt activity on the spur of the moment, and it penalizes a slow, quiet, meditatively creative search for the adequate solution. It overestimates the extrovert "go-getters" and doers and underestimates the introvert solitary creators. It reverses the Taoist dictum "Doing nothing is better than being busy doing nothing."

My own theory of *creative moments*, especially of the initial inspiration or idea of a new scientific discovery or technological invention, or a religious, philosophical, or artistic creation, agrees with Moreno's theory of creative moments. We well know that the first idea of many of the greatest creations and discoveries came to their authors suddenly, "in the twinkle of an eye," as a sudden "intuitional click."¹² Hence the psychodramatic or other short-time mental test may appear to be adequate in revealing who possesses this "momentary" creativity-spontaneity and who does not. Unfortunately, this expectation is nullified by the fact that these *creative moments cannot be summoned up by their authors at any time they desire*. Often the most eminent creators labor for hours, days, or months seeking "inspiration" for a creative task. In vain: the creative moment does not occur. On the other hand, many of them are favored by such moments when they least expect them: in sleep, as in the case of many inventors; in the bath tub, as in the case of some scientists; at the

¹² For an analysis of this, the literature, factual and other evidence, cf. my *Social and Cultural Dynamics*, Vol. IV, Chap. XVI.

moment of stepping into a streetcar, as happened to H. Poincaré; after a good meal or while taking a carriage drive, as Mozart tells us about himself; and so on.¹³ On a much lower level the same thing is regularly observed among university students and in Ph. D. examinations. Most Ph. D. candidates faced by an examination, are much more stupid and "blocked" than they are under normal conditions: they cannot evoke the maximum spontaneity-creativity at the moment when they are being tested and need it most.

This "fancifulness" and "unpredictability" of the onset of the creative moment; the impossibility of evoking it in the case of even great creators when they want it, render the adequacy of psychodramatic or other tests of creativity very doubtful. If even eminent creators cannot often "warm up" their creative moments, still less can a psychodramatic director elicit creativity on the part of his testees at the moment of their being tested. Some may "awaken" their dormant creativity at such moments while others cannot. In so far as the tests are short-time tests, are repeated a few times only, contain many artificial elements hindering the awakening of the creative sparks, the results of the tests may easily overvalue creativity of small caliber and overlook entirely much greater creativity unawakened or "blocked" at the moments of testing. Thus, in estimating the ability and competence of students and others I always prefer to rely not so much on the results of this or that single examination or test as on my total knowledge of the person and of his total performances throughout one or several academic years (in normal conditions).

This means that these artificial tests, based mainly upon the presence or absence of "the fellow travelers" of genuine spontaneity-creativity, are not wholly reliable even in regard to trivial forms of spontaneity-creativity. As to the highest forms of creativity, the tests discussed are still more doubtful. The unpredictability of the initial inspirational moment; the long "incubational" period of its *status nascendi*; the protracted period of trial and error; various ways and means employed for realizing the creative idea; sometimes even a "good-luck" factor playing an important rôle in a notable discovery, invention, or creation,—these factual conditions of marked creativity¹⁴ largely preclude its being tested by the foregoing

¹³ *Ibid.*, pp. 752 ff.

¹⁴ For the main factors of creativity and its phases of conception, objectification, and socialization, cf. my *Society, Culture, and Personality* (New York, 1946), Chaps. 35, 36, 37.

methods. No one can create offhand, to the order of a psychodramatic director, Newton's *Principia* or Plato's *Republic* or Shakespeare's *Hamlet* or Christ's *Sermon on the Mount* or Phidias' Parthenon, or Beethoven's *Missa Solemnis*. Genuine high-grade creativity-spontaneity can hardly be tested by any artificial, short-cut devices in a laboratory or on a psychodramatic stage or elsewhere. *They can be tested only in the process of real life; and even there they often are not easily detected.* Even on the stage of real life a host of pseudocreational cultural "best sellers," with their ephemeral success, are frequently mistaken (by "experts" and reviewers) for genuine creative achievements; per contra, many of the greatest creative achievements are overlooked for a long period of time. Contemporary "best sellers," which bring a superficial success and within six months (on an average) are "gone with the wind" into oblivion, afford a typical example of this misjudgment. On the other hand, G. Vico's *New Science*, which had to wait some one hundred and fifty years after its publication to become recognized as one of the foremost works in the social sciences; Saint Thomas Aquinas, who even in his late twenties was still considered by his fellow students and professors as a "dumb ox" and who failed in his first attempt to get his master's degree; Hegel, who in his university diploma was specifically rated (by the university authorities and "experts") as "deficient in philosophy"; Leo Tolstoy, given a grade of C in his university course in the Russian language and composition; J. S. Bach, twice estimated below Telemann during his lifetime and accorded full recognition of his genius only after the second half of the nineteenth century—these typical cases show the difficulty of detecting great genius even in a life test, and the impossibility of discovering such creativity by means of short-time artificial tests. These facts warrant a cautiously skeptical attitude toward almost all artificial, short-cut tests of intelligence, aptitude, emotionality, creativity-spontaneity, and so forth.

To sum up. However ingenious may be Dr. Moreno's theory of spontaneity-creativity and his psychodramatic tests, they still require a great deal of clarification and improvement. They should liberate themselves from the ambiguity in question; should minimize the importance of the "fellow travelers" of genuine creativity-spontaneity; and should reinforce criteria of *adequacy* in the tests of genuine creativity-spontaneity. Finally, in regard to the highest forms of creativity these tests should be applied most cautiously, or, better still, until improved they should not be applied at all.

2. *Can Spontaneity-Creativity Be Viewed as Energy?*

The next important point in Moreno's conception of spontaneity-creativity is his claim that it is not and cannot be considered as a form of energy. Instead it is and should be studied as a specific *condition*.

The idea of the conservation of energy has been the unconscious model of many psychological theories, as, for instance, the psychoanalytic theory of libido. In accordance with this theory Freud thought that, if the sexual impulse does not find satisfaction in its direct aim, it must displace its unapplied energy elsewhere. It must, he thought, attach itself to a pathological locus or find a way out in sublimation. He could not conceive of this unapplied effect vanishing because he was biased by the physical idea of the conservation of energy.¹⁵

Since an actual study of the operation of creativity-spontaneity shows a course quite different from the Freudian theory of a "closed hydraulic system of a reservoir of libidinal energy," Moreno justifiably rejects such a theory and offers instead a different hypothesis. Instead of assuming that one "has a certain amount of spontaneity stored up to which he adds and which he spends as he goes on living" and "from which reservoir he draws as he lives, now and then using it all and even overdrawing," Moreno proposes the following theory:

The individual is not endowed with a reservoir of spontaneity, in the sense of a given, stable volume or quantity. Spontaneity is (or is not) available in varying degrees of readiness, from zero to maximum, operating like a psychological catalyzer. . . . Spontaneity functions only in the moment of its emergence just as, metaphorically speaking, light is turned on in a room, and all parts of it become distinct. When the light was turned off in a room, the basic structure remained the same, but a fundamental quality had disappeared.¹⁶

The somewhat unpredictable appearance and disappearance of spontaneity-creativity and of their "moments" make it impossible to view it as "a sort of psychological energy—a quantity distributing itself within a field—which, if it cannot find actualization in one direction, flows in some other direction in order to maintain equilibrium! . . . A sterling illustration of the fact that physical concepts such as energy cannot be transferred to a social or a psychological plane is the process of 'catharsis' which brings about fundamental changes in a situation without effecting any alteration in the energy-

¹⁵ *Psychodrama*, pp. 85 ff.

¹⁶ *Ibid.*, pp. 85-86.

pattern of the situation."¹⁷ Spontaneity-creativity is not energy but "a condition—a conditioning of the subject for free action."¹⁸ Such is the substance of Moreno's "ontological" theory of creativity-spontaneity.

I wholeheartedly agree with Moreno's criticism of the Freudian concept in regard to this as well as other points. For many years I have been pointing out the phantasmagoric character of most of Freud's ideas. I find myself in agreement also with Moreno's repudiation of the clumsy "bootlegging" of various concepts of the natural sciences, including the notion of energy, into the social and psychological disciplines. In all my works I have been combating this thoughtless, superficial, and essentially incompetent aping of the natural sciences, still fashionable among certain sociologists, psychologists, and other social scientists.¹⁹

This agreement does not preclude, however, partial dissent from Moreno's too categorical rejection of the applicability of an adequately modified notion of energy to spontaneity-creativity. When creativity-spontaneity is viewed as the highest form of energy *sui generis*, when this energy is adequately defined and its categories are adequately applied to the study of sociocultural phenomena, including spontaneity-creativity, such a conceptual framework may prove to be fruitful.

The first corroboration of this attitude is given by Dr. Moreno himself. After the aforesaid radical rejection of the notion of energy he himself admits that

In the spontaneity theory, energy as an organized system of psychological forces is not entirely given up. It reappears in the form of the cultural conserve. But instead of being the fountainhead, at the beginning of every process such as libido, it is at the end of a process, an end product.²⁰

My other reason for believing in the applicability of a properly modified and properly applied principle of energy to the phenomena of the highest creativity in its three forms—creativity in the fields of truth, of beauty, and of goodness (love)—is that in my studies I find that such a conceptual framework is heuristically fruitful. It has helped me to discover several uniformities of relationship between various "dimensions" or

¹⁷ *The Words of the Father*, pp. 175-176.

¹⁸ *Psychodrama*, p. 111.

¹⁹ Cf. my *Contemporary Sociological Theories*, Chap. 1 *et passim*, and all my subsequent works up to *Sociocultural Causality, Space, Time; Social and Cultural Dynamics; Society, Culture and Personality*; and *Reconstruction of Humanity*.

²⁰ *Psychodrama*, pp. 86-87.

"vectors" of creative love: its intensity and extensity, its intensity and duration, the intensity and adequacy of its objective "manifestations," its extensity and purity, and so on. It has helped me also to clarify several basic phenomena of the transformation of the "energy of love" into that of "beauty" or "truth," or of the transformation of the energy of "truth" into those of "love" and "beauty," and so on. It has made it possible in several cases to derive even a roughly quantitative formula of the relationships between different variables ("vectors" or "dimensions") of these highest forms of energy. Nay, more. It has been helpful also in clarifying the relationship and transformability of these highest forms of energy into the "lower ones:" biological, electrical, radio, thermal, mechanical, and so on.²¹ To be sure, the whole framework of my energy concepts has nothing to do with the Freudian "closed system of libidinal energy," nor with other attempts at "bootlegging" poorly understood concepts and laws of energy from the physical sciences. In an adequately modified form the concept of energy is rather in substantial agreement with the quoted partial admission of it by Dr. Moreno. Further clarification, experimentation, and research in connection with this problem are needed. And such an investigation is likely to confirm the heuristic fruitfulness of an adequately constructed concept of energy for a study of spontaneity-creativity and other sociocultural phenomena.

To sum up. We are indebted to Dr. Moreno for his constructively creative theories of spontaneity-creativity and for several techniques of their study and testing. Any truly fruitful theory in its initial formulation raises many problems and is in need of clarification at several points; so also does Moreno's theory. The ambiguity of two basic aspects of his theory I have attempted to clear up in this paper. The criticism offered does not question the central, valid part of Moreno's theory. It aims only to separate from this valid part the questionable or vitiating elements. Freed from these shortcomings, the core of the theory is reenforced and becomes capable of further creative growth.

²¹ These studies will eventually be published in a substantial monograph on *Types, Techniques, and Factors of Altruistic (Love) Experience*.

THE THEOLOGY OF INTERPERSONALISM

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I. INTERPERSONAL PSYCHOLOGY

Interpersonal psychology is the scientific study of persons interacting with other persons.

How does this differ from social psychology? Social psychology is a broad and neutral description of social processes and institutions. Within this general field of society one may investigate the behavior of insects, birds, fish, animals and human beings from whatever psychological point of view one may entertain. In this work psychology co-operates with other social sciences as anthropology, history, economics, political science, sociology and education. All of them study persons in societies, each within the framework of its science, according to the interests and viewpoints represented. The psychological aspects of persons and groups in mutual relationships are studied by social psychology. Interpersonalism is a distinct viewpoint in social psychology that focuses upon the interaction of persons with each other.

To define further this point of view, we may note the following emphases as distinctive of interpersonal psychology.

(1) Persons are the central focus of this psychology. Within each person are dynamic motives, partly conscious and partly unconscious, energizing his behavior. These dynamic tendencies are not inherited or unlearned instincts, but specific psychomotor tensions toward goals arising from concrete social interests and personal needs. The causal dynamics of human behavior are spontaneous desires in the present to learn from past experience how to create better values in the future.

(2) Persons confront each other in *I-Thou* relationship. Other persons constitute the chief interest of every healthy person. To belong to another person as my *Thou* has an altogether different meaning than relationship to a thing. It is passive and unresponsive; a person is interactive and responsive in unpredictable yet irresistible ways. Even when alone a person asks "What will that person (or they) think of me?"

(3) Personal motives are reactions to the significant persons in one's social orbit. Neither biological heredity nor physical environment are as decisive as the active influence of other persons. The infant senses by empathy the approval or disapproval of the mother. The adolescent

is sensitive to the ridicule and approbation of his age-group. The mature adult is scarcely ever free from anxiety as to how other persons feel toward him. We live (as Lincoln said of democratic government) of the people, by the people, and for the people.

(4) The desires and efforts of persons are aimed at goals valued by other persons. We want what other persons want because they want it. This does not result from any abstract principle like imitation but from interest in other persons as the highest values, in whose light all things take on reflected meaning. Persons are not only bearers of value, but also deciders of value. We choose values by social standards in cultures created by persons working and deciding together what is most important.

(5) Persons work for values in order to share or keep them from other persons. Human energies are lavishly expended to produce values. Is there any other reason why people work? They work for the joy of work, the satisfaction of doing something. But there is multiplied satisfaction in doing what adds up to social significance. Production is a means to social gains, either by sharing with others or defending them possessively against others.

(6) From defensive tactics come fear, rivalry and poverty. Most of the woes of personal and social life have their psychological roots in such defensiveness. From sharing come mutual confidence, co-operation and abundance of values. Much of the joy and dignity of human life is the fruit of cumulative sharing.

(7) The health of persons and societies depends upon the relations of persons to each other. When interpersonal relations are insecure, hostile and predatory the society declines and its members suffer nervous and physical disorders. When interpersonal relations provide security, love and mutual aid the society prospers and its members have a more satisfactory wholeness.

(8) Egocentricity cripples a person within his anxious shell of pride and futile defenses. The true self is a social self who discovers his unity with others in a deeper we-feeling. A child is born into a we-relationship with the mother, but egocentric parents breach that feeling of close identity. It is not enough to regress to it again, for the job of a growing person is to attain a mature we-experience of intelligent and creative responsibility toward others.

(9) A person may be disturbed and deceived by mental images of himself and others. Self-appraisals are reflected attitudes of what others

seem to think of him. Self images are acted out by taking roles to fulfill the images. Practice is needed to learn the true role of self-expression in social interaction with other persons.

(10) Role-training is aided by psychodrama in which a person may practice taking his role in reaction to other players who act the part of real persons in his social situation. Timid and inept isolates may be discovered by sociometric tests and given membership in congenial groups to learn the art and satisfaction of mutual response. Actual life situations may be arranged to provide role-learning at the reality level. In these ways interpersonal skills and securities are developed until persons become open and responsible members of an open and responsive society.

These principles of interpersonal psychology are increasingly recognized among the alert social scientists of our time. There are some "pure scientists" who rigidly insist we must deal only in facts uncontaminated by any values. These purists make their contribution, to be sure, but it is by their own limitation an abstract one remote from the urgent needs of human living. In his recent *Social Psychology* Wayland F. Vaughan well presents the task of social psychology as "the science and art of living together", taking the position that psychology is concerned with values as properly as with facts.¹ Sciences are normative as well as descriptive, applied as well as theoretical, in seeking the value of truth and utilizing such truth in reference to other values.

There are specialists who view the scientific task as one of isolation. Each variable is to be isolated from every other factor to measure its unrelated identity. The lonely scientist isolates himself in his ivory-towered laboratory to separate wholes by sterile analysis into atomistic elements. Gains have been made in some experiments by methods of isolation. But this is not the procedure of the social sciences. For social sciences work with living beings interacting in complex social relationships. To dissect life is to kill it, and to isolate a person is to abstract him from his essential context of activity and meaning. Interpersonal psychology investigates dynamic interaction of persons in the network of their mutual and constantly changing responsiveness. The unit of study is a larger perspective than isolated stimuli or the reflex arc. It is a whole field of common life and culture where persons meet other persons in search of mutual values.

¹ W. F. Vaughan, *Social Psychology* (New York: The Odyssey Press, 1948), pp. 105-116.

II. PHILOSOPHICAL BACKGROUNDS

Every scientist has a larger frame of reference that gives perspective to his labors. The presuppositions and axioms of his science are philosophical; not proved by scientific means but taken on faith as essential to every step in the process of scientific reasoning. To criticize any part of science one must see it in relation to other events in larger perspective. And when the scientific task is done it gains significance in reference to wider meanings, applications and hypotheses. The interaction of persons rests upon postulates of a physical order wherein they meet, and metaphysical principles by which interaction is possible in a communicative universe.

The general philosophical framework of interpersonalism is organic pluralism. Individual persons are real, yet never in isolation, always in relation to each other upon a common ground of interaction. This indicates a numerical pluralism of many selves in a qualitative monism of person-natured reality.

In the history of modern thought this view is known as idealism. Immanuel Kant (1724-1804) is the father of modern idealism. He dignified the human self as the critical and creative organizing genius that brings the multiple sensations into unified perception, that discovers value in the phenomenal world by discerning the purposes of life and the imperatives of the moral law.

J. G. Fichte (1762-1814) declared that the world of mind or spirit is the real world. Philosophy begins not with fact but with act, knowledge is not a passive mirroring of the world but a self-determining and creative achievement. The subjective self is the creative center of knowledge, reality and value; the individual human self co-operating with the Absolute Self (God). As we become aware of pure activity in ourselves we know the essence of reality, and when we exercise a moral purpose we are striving to realize the meaning of the universe, the voice of God.

F. W. Schelling (1775-1854) represented the Romantic *Aufklärung* in German literature in which Lessing, Herder, Goethe, the Schlegels and Novalis saw the world as a dynamic process of evolution guided by moral purpose, a unity in diversity to be known only by the inner intuition and free activity of the living person. Nature whether conscious or unconscious is pure activity, spontaneous freedom, self-determining energy. We are not real as isolated individuals, but only as we are related in the Absolute Self. A dialectic process is at work, action is followed by reaction, opposition moves on to a higher synthesis.

G. W. Hegel (1770-1831) carried this dynamic view of reality into every sphere of history and reality by tracing the dialectical movements of thesis, antithesis and synthesis as the unfolding development of the Absolute toward the goal of self-consciousness, the realization of a mind that knows the meaning and purpose of all. To Hegel the real was the rational and the rational the real. Not abstract static logic, for this is unreal, but dynamic concrete movement of experience through steps of opposition and harmony as eternal never-ceasing creation. He was followed by Arthur Schopenhauer whose voluntarism emphasized will as the real self; and by idealists from the ranks of natural science, such as Lotze, Fechner, Hartmann, Wundt and Paulsen who were not so ambitious to erect architectural systems, but emphasized the experience and ideal values of persons in a kindred world.

In America with the Twentieth Century came a new school of idealists known as personalism. Borden P. Bowne, Josiah Royce, Mary W. Calkins, Edgar S. Brightman, Albert C. Knudson, Ralph T. Flewelling and Peter A. Bertocci have worked in philosophy and psychology as representative personalists. They have distinct variations among themselves but agree on the main tenets of a personalistic point of view. Personality is the key to reality. The Cosmic Person is the continuous creator of the universe and life. Man is a co-creator with God, and even while sustained by him, is free to choose and act spontaneously. The many persons are interrelated by the sustaining will of God, and the interest and responsibility they show toward each other. "Each person is a remembering identity, binding a multiplicity of experience into personal unity . . . (who) interacts with many other persons in social relations."²

At the same time two Europeans were also enriching the personalistic stream. William Stern, the psychologist-philosopher whose *Person und Sache* delineated personality as engaged in purposeful convergence with its environment by impression and expression, brought forth a final publication³ at the close of his career in the United States and influenced thinking here, most notably in the psychology of Gordon W. Allport.

The mystical philosopher Martin Buber has given eloquent voice to interpersonalism with his poetic utterance, *I and Thou*. The world appears to man as twofold, depending upon his attitude, and the primary

² E. S. Brightman, *Nature and Values* (New York: Abingdon-Cokesbury Press, 1945), pp. 64-65.

³ William Stern, *General Psychology from the Personalistic Standpoint* (tr. by H. D. Spoerl. New York: The Macmillan Company, 1938).

words he speaks. The *I* may speak *It* and take a neutral relation to a thing; or *I* may speak to *Thou* in the reverent attitude of appreciation for a person. The greatest meaning of life arises in the experience of a personal relationship; for every person reveals the exaltation of the Divine Thou, and he who goes out to meet a person meets God.⁴

Psychologists and psychiatrists are also showing marked interest in personality. While in the early decades of this century they were often absorbed with mechanistic and atomistic studies of the minor aspects of biological structure and behavior, there is a notable trend at the mid-century to appraise personality as a whole in social relations. Clinical psychology and psychiatry are well aware of the significance of interpersonal relations in the health, efficiency and happiness of persons.

Three psychiatrists deserve special mention for their leadership in the development of interpersonal psychology. They are Jacob L. Moreno, Fritz Kunkel, and Harry S. Sullivan. Sullivan has not declared what philosophy he holds as a framework for his operational interpersonal psychology.⁵ The first two have declared their philosophy in theological outline. A brief examination of their interpersonal theology will give a useful perspective.

III. THE EXPERIMENTAL THEOLOGY OF MORENO

The experimental theology of Moreno is set forth in *The Psychodrama of God* (New York: Beacon House, 1947). This was first published anonymously as *Das Testament des Vaters* in Vienna in 1920.⁶ It was translated into Spanish, then into English, and published in 1941 with preface and commentary as *The Words of the Father*. The *Words* are dramatic utterances of God speaking to all people, declaring his subjective feelings, motives and purpose toward them. They are recorded anonymously, as anyone might receive them directly from God himself. They are universal in applying to everyone regardless of race, nation or class without prejudice or preferment. They invite us to understand the viewpoint of God and share with him the joy and responsibility of continuous creation.

⁴ Martin Buber, *I and Thou* (German edition, 1923; tr. by R. G. Smith, Edinburgh: T. & T. Clark, 1937).

⁵ The valuable work of Dr. Sullivan was interrupted by his untimely death January 14, 1949.

⁶ First edition: *Die Gefährten*, published in 1920, Vienna; second edition by Gustav Kiepenheuer, publishers, Berlin, 1922.

Here is revealed the experimental theology that is back of Moreno's scientific and therapeutic work. God is the Father of all, who freely gives his creative energy to every creature. God is not distant in past time or heavenly space, but actively meeting us in every event and experience of the present. We misrepresent God in churches, books, creeds, theologies, or any finished works. He is ever creating anew, inviting us to set aside artificial restraints, to forego pride in achieved results, and be spontaneous.

The principle of spontaneity is the ultimate source of all existence and values. Spontaneity is the creative movement of life and growth, freedom and productivity everywhere. Every spontaneous impulse centers in the Creator. The basis of man's life, the seat of reality is the present moment which rises from the creativity of God. Every living being appears on an axiological scale of values with God at the maximum pole of spontaneity and by degrees to the other pole of fixed and rigid cultural conserves.

The difference between one thing and another—and thus, between God and man—lies in the degree of spontaneity and creativity which each can summon. The amount of spontaneity and creativity which God can summon and which he is required to summon—is so far greater than that of any other that the difference becomes absolute. Indeed, God is the Being who can summon the maximum of spontaneity and He is the Being whose spontaneity has become all creativity.

It can also be said that the place where God is is that place where spontaneity and creativity come to their greatest expression. By "amount" of spontaneity, we do not mean amounts which are stored up or conserved. . . . Spontaneous creativity—however supreme it may be in itself—once conserved is, by definition, no longer spontaneity; it has lost its actuality in the universe. What conserved spontaneity truly represents, at best, is power, a means of expressing superiority when actual superiority has ceased to be available. . . . He is and must be able to summon any amount of spontaneity necessary for the maintenance of the universe.⁷

The spontaneous principle of creationism is the basis upon which theology can develop experimental procedures. The great theologians have in their way been experimenters, using their own existence as the instrument by which to explore the nature of God. By such experiences as they lived through in social action, prayer and meditation they sought to comprehend the meaning of existence at large. Unfortunately tradition has passed on to us, as Moreno shows, only a heritage of doctrinal con-

⁷ *The Psychodrama of God* (New York: Beacon House, 1947), pp. 165-166.

serves. What we need to capture for ourselves is the dynamic spontaneity they lived through. We can only discover the nature of God and the meaning of existence by living through in our own experience such creative experiments in spontaneity.

IV. THE THEISTIC PSYCHOLOGY OF KUNKEL

In Search of Maturity is the best account of Kunkel's "theocentric" psychology.⁸ He denies that psychology is a natural science; rather it is a philosophical science, and more of an art than an exact quantitative science. He acknowledges indebtedness to Freud, Adler and especially Jung whose "collective unconscious" has most influenced him. But just as the materialistic period of recent history produced Freudian psychoanalysis, and the brief interlude of idealism after World I produced Adlerian individual psychology, so the Christian life is bound to produce a religious psychology. To the Christian psychologist, anxiety is the sense of distance between a man and God. By the dynamics of anxiety a man is forced to recognize the deficiencies and perils of his situation and consequently to struggle more earnestly for a solution which he cannot attain by himself alone. The more we understand neurotic symptoms the clearer we see that man cannot heal his suffering until he finds a religious solution. Sin is not merely to be shunned, but explored until from its darkness there comes a way to and a desire for the light.

In his religious psychology man is not a body vs. a spirit, but a unit beyond both which decides within dynamic energies how to act. There is a primitive longing in every person that may be called collective unconscious power. This power is felt as urges of hunger or love, for self-preservation or danger and adventure. It is a crude longing for deeper experiences and may be destructive or creative. This inner power has to face outer situations in order to be lived out, and consciously developed if it is to reach creative levels. Such power is not to be understood in causal terms as a push from behind but rather in attractive terms as pulled by goals that act like a magnet. These goals are to find fulfilment in we-experiences from which all values arise.

This fulfilment is defeated by the ego as the sham-center of life. The real self is not *I* but *We*. Our true self is a religious experience, yet more than our conscious personality. The human self is more than human love, it is also the creativity of the Creator working in and through the

⁸ Fritz Kunkel, *In Search of Maturity* (New York: Charles Scribner's Sons, 1943), p. ix.

person. He who truly finds himself finds God. From *I*, growth moves to *We*, and then to *He*. There are two large fields of experience: the religious and the unconscious. The we-experience is the open door to both. "There is no experience of God without the experience of the human We-relationship."⁹

The power which moves us is not working from the past as a blind force. That which leads us to love, to strive and create is the creative power of the value ahead, the goal that draws our best efforts. Theology explains the known by the unknown as the world depends upon God, and the creature is the work of the Creator. Creation does its work not mechanically but by purpose, valuation and love. God is creative life, and the more alive we are the nearer are we to God.¹⁰

Anxiety may be defined as the opposite of creativity. It is the power of creation flowing in the opposite direction: creation being a centrifugal force; anxiety centripetal. In the state of anxiety the intensity of life increases but its scope decreases. Consciousness becomes keener but its contents disappear. . . .

Our creative center, the Self, is our positive relationship to God. Our Selfhood is the experience of our dependence on and our support by the Creator whom we know only partially. We realize creative power if we live from our real center. Then we are channels of creation. If we lose our Selfhood and our positive relation to the Creator, we are cut off from any new influx of power. And the power which is left, as it were, flows back into eternity. This ebb of creative power is what we feel as anxiety.¹¹

Our human predicament is that we misunderstand and misuse the creative powers entrusted to us. Then they become negative and cripple or destroy us unless we find a way out. To gratify the ego we falsely call it the will of God, and worship it in futile idolatry. The ego may even be projected outward upon another person or a group in a fascination that is still idolatry because it serves a false center. Doctors, counselors and ministers may produce idolatry instead of faith by exploiting the crises of their fellowmen to be idolized by them. Wherever people try to live for their own sake they are disowned and doomed to tension, fear and frustration.

Our obligations toward ourselves and others are not contradictory,

⁹ Ibid., p. viii.

¹⁰ Ibid., p. 42.

¹¹ Ibid., p. 90.

"Indeed there is only one duty, namely to grow mature."¹² In so doing we find our true center, our psychological home, our highest value in a positive relationship to God. This, in the title of another Kunkel book, means that *creation continues* as we continue to grow through emotional honesty, confessional meditation, and co-action.

V. CONCLUSION

1. No science is complete in itself. Behind every scientific operation is a philosophical background of postulates and hypotheses. The philosophy of interpersonalism is an organic pluralism of persons united by a Cosmic Person. This has been called personalism, but to accent the social relations of our universe we call it interpersonalism.

2. The interpersonalism of Moreno and Kunkel is theocentric. With this position I agree.¹³ God is the creative center of all interpersonal relations. This hypothesis is our common faith undergirding human labor. Though arriving at our positions independently, we meet at the focal point of a converging theology.

3. Interpersonal theology is co-creationism.¹⁴ This is not pantheism for all persons are real though interdependent. Each person has spontaneous capacities for growth and free choice. As we rise in spontaneity we become co-creators with the Creator in our sphere of interaction. Creation continues from moment to moment and person to person insofar as we outgrow egocentric defenses and work together in the joy of sharing values.

¹² Ibid., p. 191.

¹³ See Paul E. Johnson, *Psychology of Religion* (New York: Abingdon-Cokesbury Press, 1945). Religion is there defined as "personal co-operation with a trusted Creator of Values" (p. 30). Earlier statements by the author on this theme are, "Josiah Royce—Theist or Pantheist", *The Harvard Theological Review*, Vol. 21 (Cambridge: July 1928), pp. 197-205; "A Social Universe", *The Personalist*, Vol. 14 (Los Angeles: Autumn, 1935), pp. 347-356; *Who are You* (New York: Abingdon Press, 1937), pp. 179-188; "Theism Plus Humanism", *The Aryan Path*, Vol. 9 (Bombay: March, 1938), pp. 108-111; and "The Inductive Approach to God", *The Journal of Philosophy*, Vol. 38 (New York: July 3, 1941), pp. 375-381.

¹⁴ See *The Words of the Father*, p. 196.

ORIGINS AND FOUNDATIONS OF INTERPERSONAL THEORY, SOCIOMETRY AND MICROSOCIOLOGY

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Note: I apologize for the autobiographic character of this paper, but being exposed to the dynamic comments and criticism of such distinguished scientists as Gurvitch, Sorokin, von Wiese and Zazzo made a more direct response necessary.

A man may draw his inspiration from a conceptual heaven or hell. Freud once implied (*Flectere si nequeo superos, Acheronta movebo*," motto to "The Interpretation of Dreams") that he had to go to Hades in order to find some significant connections and interpretations for the world above. My calling was just the opposite, I had to go to heaven to get advice for the world below. I had no alternative, the world in which I found myself when I came to my senses and to my first intellectual formulations about things, was torn to pieces, spiritually and physically. Nietzsche, Marx, and Freud, each in a different area, have brought to effect and to a calamitous end the thought waves which Spinoza had initiated; the *Deus sive Natura* had further deteriorated to the *Lucifer sive Natura*. All old values were destroyed for whatever good or bad reasons, new values were not created to replace them. The historical situation compelled me, therefore, to go the whole way of reconstruction in a more radical and extensive way perhaps than anyone else before me in our Western World. Marx saw the position of man as that of a member of society, the struggle within it as his ultimate destiny. Freud saw the position of man as the one of a traveler between birth and death, the cosmos beyond was shattered.

I moved man back into the universe.

Man is more than a psychological, social or biological being. Reducing man's responsibility to the psychological, social or biological department of living makes him an outcast. Either he is co-responsible for the whole universe or his responsibility means nothing. The life and future of the universe is important, indeed the only thing which matters—more important than the life and death of man as an individual, as a particular civilization or as a species. I postulated therefore that *a theory of God* comes first. It must be attained first and is indispensable in order to make the life of any particle of the universe significant, whether it is a man, or a protozoon. Science and experimental method, if it be worthy of its claim, must be applicable to the theory of God or whatever the name which we give to a theory or the supreme

value. I was in the strategic position that the old God values were dead and that agnosticism reigned mankind in the first quarter of the twentieth century. I could therefore construct new God values with a certain amount of disregard for past constructions. Theology became to my mind what it literally means—the science of God himself, of the supreme value (not of God's creation, the biography of saints, or the religions of mankind). It is outside of this paper's domain to give a presentation of the theology which I evolved, but it is at least *autobiographically* significant here that my God-universe pattern became the blueprint, the ontological guide after which I modelled sociometry, the idea of a society in which our deepest selves are realized. It is from my theological analysis and experiments that I drew the inspiration and the certainty to forge ahead in to realms which are entirely secular, materialistic and down to earth. The application of experimental methods to theology prepared me for the task of applying them to human relations. These experiments in theometry helped me to see the loopholes in the current experimental methods in science as proclaimed by Mill. The form which the experimental method in theological science takes differs, of course, from the form it takes in social science which again differ widely from their form in biological or physical science. But there is no "absolute" cleavage between interpersonal, experimental dynamic theology and interpersonal, experimental sociometry. The old impasse between science and theology has ceased to exist except for antiquated theologians and ignorant scientists.

The uninhibited journey of a psychodramatic theometrician throughout the universe could not be continued endlessly. As soon as he settled down to a specific task, his sociometric relation to the nextdoor neighbors, the macroscopic journey became increasingly microscopic to the point where the distance between one neighbor and another appeared to be far greater than the distance between him and the stars.

Georges Gurvitch, carefully examining the foundations of sociometry queries the reasons why certain domains of investigation have not been included by sociometrists, particularly as he formulates it, the "we" in its three degrees of intensity, Mass, Community and Communion. As the critique is particularly addressed towards me I am glad to admit that a great many investigations have yet been outside of my opportunities but at no time have they been outside of my vision. In the work which anticipated and precipitated our concrete sociometric experiments the We problems are at their very essence. But to bring them down to earth cannot be done by piece-

meal. We made lists of hundreds of research projects of which unfortunately only a small part has been brought to realization. All my publications between 1914 and 1925 are nothing but a reduplication of the ideas of Community and Communion not only as to their theoretical formulations but as to their realization in practice, bringing them to a reality test in front of a frequently hostile world. A careful reader of my situational dialogues about the author, the orator, and the actor, of my speeches about the moment, the meeting and anonymity, last not least of my autobiography of the king, will recognize that my very religious preoccupations conditioned me rather to exaggerate than to underrate the importance of the We experience as expressed in community and communion. Indeed, one may easily recognize that the same brainwave is still operating in techniques like sociodrama and axiodrama and in my revisions of the experimental method in science. What is my emphatic criticism of the mechanical use of the sociometric test, its distortion into a sociometric questionnaire, my recurrent advocacy of sociometric town meetings but a structuring of the sociometric method into a community experience, the most violent systematic expression of We feeling yet crystallized in our time? There is nothing mystic about sociometric meetings or psycho-and sociodramatic sessions but they have to be co-experienced as spectator and actor in order to learn of their full significance. It is exactly the "We" which we cannot put into an article when we write about "us". But we can materialize and see some phases of the We in a sociodrama.

ORIGIN OF INTERPERSONAL THEORY

At the turn of the century the formula "the individual versus the Universe" appeared to be sufficiently wide for expressing the total situation. The socius was yet unborn. One could have multiplied the "individual" by the number of organisms the universe contained. One could also have given every individual the opportunity of projection, everyone projecting his own private world into the universe, filling the universe with more or less harmless bubbles. The psychoanalysts were at that period not interested, for instance, in what these bubbles actually did to others but chiefly in the internal dynamics of the individuals from whom they came. The psychologists of that era were dealing with individuals separate from one another. The sociologists were dealing with undifferentiated masses (in this point at least, Comtists and Marxists were in accord). The biologists, social biologists and evolutionary biologists à la Bergson were equally satisfied with the above formula or at least they did not produce any "open revolt" against

it. The revolt came—and it is my thesis that careful historical investigation will bear me out—the revolt came unexpectedly from men inspired by a neotheological, or using a more modern term, by an axiological orientation. In many of the great religions ethical prescriptions were part and parcel of their code of morals but they remained imperative and mystic; they were never permitted to become objects of scientific investigation. But when in the beginning of the twentieth century the atheistic and agnostic gospels started to spread world-wide a pro-religious movement which countered them developed. It did not seem to differ much at first from the romantic movement of the nineteenth century, for instance, Kierkegaard never divorced himself from Christianity as a framework and was entirely submerged by the imperatives of his private existence, at no time reaching beyond it. The new movement did not appear to be different except for one thing. It began to emphasize the *You*, the You as a person, the responsibility towards the You instead of only towards the I. Kierkegaard's fear of losing the "I" in the "You" was transcended by the movement of the You towards the I taking place *simultaneously* with the movement of the I towards the You. Gradually some interpretations were given of the You and I which created for it a radically new position; the idea of *meeting* between you and I, and any number of Thou's and I's forming a community; the idea of the "moment", neither as a function of the past nor of the future, but as a category in itself; the idea of the "situation" and the challenges emerging from it; the ideas of spontaneity and creativity as universal processes of conduct, countering the clichés of the ethical and cultural conserves; and above all the idea of urgency, the urgency of their immediate application. Although they were deeply saturated with value feelings and ethical aspirations they had an *unmystical* appearance and a character which one could call "axio-pragmatic". This countermovement had a theoretical and a practical part. The most popular practical manifestation of the revolt was Mahatma Ghandi. He is mentioned here because of his spiritual and anti-materialistic message; theoretically he was a reactionary conservative. Ghandi's India did not need and was not ready for a theoretical revolt. The focus of the theoretical inspiration was naturally assigned to Central Europe (as it was in a parallel situation with the nineteenth century revolt culminating in Marx and Kierkegaard as the two extremes). European culture, especially in its axiological top structure was threatened from all sides. It is here therefore, where the revolt massed itself. One has to study the trail blazed by some of the neo-protestants following Kierkegaard as Ferdinand Ebner (1921), some of the neo-Tolstoyan disciples, some of the Rus-

sian writers influenced by Dostojewsky as Ssolowjow and Berdjajew, some of the French neo-catholics like Péguy and Rimbaud, some modern exponents of chassidism like Martin Buber and my own anonymous writings with the "Invitation to a Meeting" (1914) as the central core, in order to come face to face with the original inspirations out of which interpersonal theory and sociometry grew.

All these groups must be counted in as having pioneered the new idea as to what constitutes truly human relationships and to have prepared the ground for experimentation. Prior to this the structure of the "I" had the central position. In the new theory of relationships the structure of the You's moved into the center. And suddenly, out of this insight the *imperative of the meeting*, of the two-way encounter was born, the "invitation to a meeting," one meeting with the other in the fullest realities of themselves and in the fullest responsibility toward the immediate situations. It is thus that by ethically oriented situational imperatives the groundwork of modern interpersonal theory was laid. Faced with the dilemma of Marxism the secularly oriented social sciences appeared in themselves impotent in integrating it into or creating the necessary counter concepts and counter instruments. The religious masses of mankind, in retreat against the onslaught of atheism and agnosticism shocked their leaders into a new assessment as to what the essence of all great religious teaching has been and the result was spontaneity-creativity, sociometry and sociodrama, the gift of a dying religious world towards the foundations of a new social and axiological order. This hypothesis of the axiological origin of modern interpersonal theory throws a new light upon the gradual emergence, approximately a decade later, of social thinkers in Europe and the United States, who paved the way towards a science of human relations. They, as for instance G. H. Mead, F. Znaniecki, W. J. Thomas, L. von Wiese, P. Sorokin, G. Gurvitch, could not help being influenced by the ethical and axiological concepts which dominated our cultural climate.

It was a lucky chain of circumstances which made me the spearhead of the new ideas so many years ahead of others and of men much older than myself. As compared with Buber my insistence upon immediate religious action and my theorizing of the moment and the meeting, versus his interest in retrospective prophesy, was an asset. On the other hand, my interest in exact science, my early acquaintance with psychiatry and psychoanalysis (my work at the Psychiatric Institute in Vienna began in 1911), in addition to my preoccupation with practical axiology gave me an advantage over sociological and psychological colleagues and inspired me to at-

tempt a synthesis, not only for science's sake but also in order to maintain my own mental equilibrium. Among the simplest accounts of my interpersonal theory and practice is the following quotation (taken from my "Rede Über die Begegnung"—Speech About the Meeting—published by Gustav Kiepenheuer Verlag in Potsdam, 1923, p. 24-26).

"Between any particular place wherein any particular persons live and this or any other particular place, in opposite or in all possible directions, there are many countries. And each of these countries has numerous districts. And every district has so and so many communities. And every community may have more than hundred or more than thousand persons. And each person, when one meets the other, lays claim, one upon the other.

There are situations for one, there are situations for two, there are situations for more than two. There are situations for all. When a situation is so characterized that its problem is related to one, then it can not be solved but in the one, the afflicted one, in himself, alone. But when a situation is so constructed that its problem is not related to one, but two, then it cannot be resolved but in the two, by the afflicted two's, through them and between them, alone. But when a situation is so constructed that its problem is not in relation to two but to more than two, then it cannot be resolved but by more than the two, by the afflicted ones, through them and between them, alone. But when a situation

"Zwischen jedem beliebigen Ort, in dem beliebige Wesen wohnen, und dieser oder jeder beliebigen Stelle, in entgegengesetzter und allen möglichen Richtungen, liegen viele Länder. Und jedes der Länder hat mehrere Bezirke. Und jeder Bezirk soundso viele Gemeinden. Und jede Gemeinde hat mehr als hundert oder mehr als tausend Seelen. Und jede Seele, wenn eine der anderen begegnet, erhebt Anspruch eine auf die andere.

Es gibt Lagen für Einen. Es gibt Lagen für Zwei. Es gibt Lagen für mehr als Zwei. Es gibt Lagen für Alle. Wenn eine Lage so beschaffen ist, dass ihr Thema an Einem haftet, kann es nur in Einem, dem Betroffenen, in ihm selbst gelöst werden. Wenn aber eine Lage so beschaffen ist, dass ihr Thema nicht an Einem, sondern Zweien haftet, kann es nur in Zweien, von den Betroffenen, durch sie hindurch und zwischen ihnen gelöst werden. Wenn aber eine Lage so beschaffen ist dass ihr Thema nicht an Zweien, sondern mehr als Zweien haftet, kann es nur von mehr als Zweien, von den Betroffenen, durch sie hindurch und zwischen ihnen gelöst werden. Wenn aber eine Lage so beschaffen ist, das ihr Thema

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is so constructed that its problems is not related to more than two but to all, then it cannot be resolved but by all, by all the ones who are afflicted, through them and between them.

There are innumerable communities and every community consists of a number of streets. And every street has a number of houses. And every house has a number of apartments. And in every apartment live a number of persons. So there are innumerable millions of persons upon whom our situation depends and whose situation depends upon us. Thus there are innumerable millions of persons who form the knot which chokes us.”*

nicht an mehr als Zweien, sondern Allen haftet, kann es nur von Allen, den Betroffenen, durch sie hindurch und zwischen ihnen gelöst werden.

Es gibt unzählige Gemeinden. Und jede Gemeinde besteht aus einer Anzahl Strassen. Und jede Strasse hat eine Menge Häuser. Und jedes Haus mehrere Wohnungen. Und in jeder Wohnung leben etliche Personen. So sind es unzählige Millionen von Wesen, von welchen unsere Lage abhängt und deren Lage von uns abhängt. So sind es unzählige Millionen Wesen, die den Knoten bilden, der uns würgt.”

This quotation is lifted from a speech which—like all the dialogues and speeches to which it belongs—is strictly *concrete-situational*, that means it is not merely a general theorizing on what interhuman or interpersonal relations are, like in a sociological treatise; it is actualized and delivered in the now and here, in a specific setting requiring exactly *this* speech, *this* audience, and *this* actor and the form of delivery it has, in role, gestures and phrasing. Outside of this setting, its locus nascendi and primary situation, it loses its axio-pragmatic significance or, as we sociometrists say today, its adequate motivation. Lifted from the actual speech, recorded, transferred and quoted in this paper, twenty-six years later, it is here reduced to an aesthetic-intellectual reference. Situationally speaking, all religious, philosophical and sociological literature is of such a “secondary” nature. From this point of view the New Testament is at best a “report” of situations; divorced from them and made available for the “coming generations” it is merely a religious conserve. A far more inferior, immediate situation but lived out here and now is qualitatively superior to the high grade new-testamentarian

* For illustrations of interpersonal and group dynamics in situ, see “Der Königsroman” (1923) and my “Dialogues and Speeches” (1918-1919) to be published in translation by Beacon House in the fall of 1950.

one. Interpersonal theory and the situational imperative grew therefore, hand in hand. The locus nascendi stimulated also the birth of a new significance of the "moment". The moment is now related to and a part of the situation. It is no longer a part of "time", like the ever-vanishing present, related to a past and a future, the endpoint of past episodes and the starting point of future episodes, submitted to cause and effect, to psychological and social determinism. The moment operates in a totally different dimension from the past-present-future continuity; it is tangential, not identical with it.

A simple account as to what the moment means within a situational context is given in my "Rede Über den Augenblick"—Speech About the Moment—published by Gustav Kiepenheuer in Potsdam, 1922, p. 27-29.

"This speech has no past, no recurrence, no future, it is not an heritage and it is not an end-product. It is complete in itself. A feeling must be related to the object of its feeling. A thought must be related to the object of the thought. A perception must be related to the object of the perception. A touching must be in contact with the object of the touching. This speech is the object of our thinking. This speech is the object of our thoughts. This speech is the object of our perception. This speech is the object with which our touching is in contact. Have then all feelings which belong to it, to our object, have they all emerged now and here? Have then all thoughts which belong to it, to our object, have they all emerged now and here? Have then all perceptions which belong to it, to our object, have they all emerged now and here? Have all touches which are to be in contact with our object, have they all emerged here and now? Or have

"Diese Rede hat keine Vergangenheit, keine Wiederkehr, keine Nachkommenschaft, sie ist kein Erbteil und kein Ergebnis. Sie ist vollendet. Ein Gefühl mus beim Gegenstand sein des Gefühls. Ein Gedanke mus beim Gegenstand sein des Gedankens. Eine Wahrnehmung mus beim Gegenstand sein der Wahrnehmung. Eine Berührung mus beim Gegenstand sein der Berührung. Diese Rede ist der Gegenstand unserer Gefühle. Diese Rede ist der Gegenstand unserer Gedanken. Diese Rede ist der Gegenstand unserer Wahrnehmung. Die Rede ist der Gegenstand unserer Berührung. Sind nun alle Gefühle, die zu ihr, unserem Gegenstand gehören, jetzt entstanden? Sind nun alle Gedanken, die zu ihr, unserem Gegenstand gehören, jetzt entstanden? Sind nun alle Wahrnehmungen, die zu ihr, unserem Gegenstand gehören, jetzt entstanden? Sind alle Berührungen, die zu ihr, unserem Gegenstand gehören, jetzt entstanden? Oder haben wir manche

we had some feelings which are related to the object, did we have them already outside of the object, unconnected with it? Feelings which have emerged in the passage of time, without it and have vanished without? Or have we had some thoughts which are related to the object, did we have them already outside of it, unconnected with it, which have emerged in the passage of time, outside of it and have vanished outside of it? Or did we have some images which are related to the object, did we have them outside of it, unrelated to it, which have emerged in the passage of time, outside of it and have vanished outside of it? Or did we have some touches with the object outside of it, unconnected with it, which have emerged in the passage of time, outside of it and have vanished outside of it? *We did not have them.* Feelings for it, thoughts of it, perceptions of it, touches with it, which have to emerge and vanish only now and here, have emerged and have vanished now and here.

"What is it, therefore, that I, the producer of this speech, must say about it? *It is not a speech which was prepared in advance of the situation. It had reason to emerge and no part of it is missing.* It did not step in to replace necessary pause and silence. It did not force itself in to replace another speech which may have been more fitting.

Gefühle, die auf sie bezogen waren, schon ausser ihr, unverbunden mit ihr gehabt, die auf der Zeitstrecke ohne sie entstanden und erloschen sind? Oder haben wir manche Gedanken, die auf sie bezogen waren, schon ausser ihr, unverbunden mit ihr gehabt, die auf der Zeitstrecke ohne sie entstanden und erloschen sind? Oder haben wir manche Bilder, die auf sie bezogen waren, schon ausser ihr, unverbunden mit ihr gehabt, die auf der Zeitstrecke ohne sie entstanden und erloschen sind? Oder haben wir manche Berührungen mit ihr, ausser ihr unverbunden mit ihr gehabt, die auf der Zeitstrecke ohne sie entstanden und erloschen sind? Wir haben sie nicht gehabt: Gefühle für sie Gedanken über sie, Wahrnehmungen von ihr, Berührungen mit ihr, die nur hier zu entstehen und vergehen haben, sind nur hier entstanden underloschen.

Was ist es daher, das gefragt, ich, der Werker dieser Rede, über sie sagen müste? Es ist nicht eine Rede im Bau, müste ich sagen. Sie hat Grund gehabt zu kommen und kein Teil fehlt an ihr. Sie ist nicht getreten an notwendigem Schweigens statt. Sie hat sich nicht gedrängt an anderer Rede statt. Sie ist einzig, unersetzlich, unverbesserlich. Kein Wort

It is unique, unreplaceable, cannot be improved upon. No word is missing in it, no phrase is missing in it, no thought is missing in it. It has a correct beginning, the correct ending. One sentence develops out of the other, one word develops out of the other, one thought develops out of the other, in logical sequence. It is adequate. Therefore it can be considered as appropriately produced."

fehlt ihr, kein Satz fehlt ihr, kein Gedanke fehlt ihr. Sie hat den richtigen Anfang, das richtige Ende. Ein Satz ist aus dem andern entwickelt, ein Wort aus dem andern entwickelt, ein Gedanke aus dem andern entwickelt, in unbarmherziger Folge. Sie genügt. So ist sie als entstanden zu betrachten."

These were my origins. Whenever I turned away from ethical-philosophic to scientific objectives I could draw from my old saving accounts. As one can see from the quotations above they take no sides, they can easily be applied universally, except for manner of speech they could be the position of an operational social scientist or sociometrist of today. It is with this heritage of insight and instruments that I moved into the development of sociometry.

FOUNDATIONS OF SOCIOMETRY

Interpersonal theory, sociometry, group psychotherapy, psychodrama, and sociodrama are of the same paternity, branches of the same tree; they grew up and belong together (in this sense psychoanalysis and projection techniques are branches of another tree).

The contribution which sociometry made consists of ideas; it is not a sum of several techniques here or there. Its ideas are the fountainhead from which theoretical frameworks, concepts and methods have sprung. Probably the most important influence which sociometry exercised upon the social sciences is the urgency and the violence with which it pushed the scholars from the writing desk into actual situations, urging them to move into real communities and to deal there with real people; urging them to move in personally and directly, with a warm and courageous heart, implemented with a few hypotheses and instruments, instead of using go-betweens as translators and informants; urging them to begin with their science now and here (action research), not writing for the millennium of the library shelves.

My premise before starting to build the theoretical framework of sociometry was to doubt the value of and discard all existing social concepts, not to accept any sociological hypothesis as certain, to start from scratch,

to start as if nothing would be known about human and social relations. It was a radical pushing out from my consciousness at least, all knowledge gained from books and even from my own observations. I insisted upon this departure not because I did not assume that other scholars before me had excellent ideas, but because their observations were in most cases authoritative instead of experimental. The naiveté therefore, with which I went after my objectives was not that of a man who is ignorant of what other scholars have done before him, but that of one who *tries* to be ignorant in order to free himself from clichés and biases, in the hope that by warming up to the role of the naive he might be inspired to ask a novel question.

Thus I tried to erase from my memory and particularly from my operations terms and concepts as individual, group, mass, society, culture, We, community, state, government, class, caste, communion and many others for which there were dozens of good and bad definitions, but which appeared to block my way of making the simplest possible start. I could not help, of course, using these terms frequently in my writings, but I always used them with the suspicion that they did not represent social reality and may have to be replaced by the truly reality-bearing concepts.*

Difference Between Sociometry and Psychology

I am in agreement with the position taken by Gurvitch that "social groups are a reality sui generis, irreducible to the elements of which they are

* Note: I am often represented as being partial to psychiatric concepts and as poorly acquainted with sociological and psychological contributions of the past, for instance by F. Znaniecki, G. Gurvitch, and L. von Wiese. However, the instance of my being a psychiatrist by vocation has been falsely interpreted. Before I attended medical school my world view was already formed. I had studied philosophy at the University of Vienna, psychology and semantics under Adolf Stöhr, mathematics under Wirtinger, Gestalt theory under Swoboda, but even these influences were secondary to my private studies of theology and philosophy. The scope of my reading was only in a small portion medical. It encompassed all the departments of science and included considerable sociological literature. Among the sociologists whom I read was Georg Simmel, "Die Philosophie des Geldes", Lazarus, Stein and Bachhofen, Marx and Engels, Proudhon and Sorel, and when I became Editor of a monthly journal, *Daimon*, in February 1918, only one psychiatrist was among the contributing editors, Alfred Adler, two sociologists, Max Scheler and H. Schmidt, the poets Franz Werfel, Frankz Kafka, Heinrich Mann, Jakob Wasserman, Ottokar Bsrezina, religionists like Francis Jammes and Martin Buber. From the company of these men it does not look as if I would have been overly influenced by psychiatrists in the development of sociometry. It should not be denied that psychoanalysis as a "negative" factor had a powerful effect upon my formulations. The same thing, however, can be said about Marxism in my sociological, and about Spinozism in my theological orientation.

composed" (see this volume, page 16). This is in full accord with the core of my writings.

The relation of sociometry to other social sciences, especially to psychology has been put forth by me in my leading article "Sociometry in Relation to Other Social Sciences" (Volume 1, Number 1 of *SOCIOMETRY*, p. 206-220). I never deviated from this position.

"The responses received in the course of sociometric procedure from each individual, however spontaneous and essential they may appear, *are materials only and not yet sociometric facts in themselves*. . . . As long as we (as auxiliary ego) drew from every individual the responses and materials needed, we were inclined—because of our nearness to the individual—to conceive the tele as flowing out of him towards other individuals and objects. This is certainly correct on the individual-psychological level, in the preparatory phase of sociometric exploration. *But as soon as we transferred these responses to the sociometric level and studied them not singly but in their interrelations, important methodological reasons suggested that we conceive this flowing feeling, the tele, as an inter-personal or more accurately and more broadly speaking, "as a sociometric structure."*

The Difference Between Sociometry and Sociology

I am in agreement with the position taken by Gurvitch that the sociometric concept of reality should give a pre-eminent place to collective phenomena in human relations and not concentrate its interest on "intermental psychology".

It is significant, in support of Gurvitch's comment of a cleavage between collective and intermental psychology, that interpersonal theory was rapidly and well received by psychiatrists. Since 1929, when I met the late Dr. William A. White, an early friend and sponsor of my ideas, interpersonal theory began to make its way. Although only partly recognized—and partly distorted—by him, the late Dr. Harry Stack Sullivan to make them palatable to a declining psychoanalytic ideology, badly in need of a lifesaver.*

Psychiatrists accepted interpersonal theory (which in the last twenty years has changed the tenor of psychiatric textbooks) but they *resisted* sociometry and group psychotherapy, fearful apparently, of being involved in collective phenomena, which they did not know how to tackle, whereas social psychologists and sociologists welcomed sociometry and contributed

*Loyalties to psychoanalytic theory handicapped Sullivan in accepting my ideas in full, although an increasing withdrawal away from official psychoanalysis and towards group theory can be observed in his writings of recent years.

to its development. By 1941, influenced by the situations in World War Two a general acceptance of group psychotherapy began, but one can observe in the literature a marked division between individual-centered group psychotherapies and group-centered ones. The psychiatrically oriented workers are inclined to treat an "individual" within a group setting, the sociologically oriented workers try to treat the "group" as a whole. One can observe the same phenomenon in the relationship to action methods, the psychiatrists showing a preference for psychodrama, the sociologists a preference for sociodrama. (Certain inconsistencies in my presentation, especially in the definition of terms are obviously due to the need to carry on our war of persuasion on at least two fronts, psychology and sociology.) However profound and ideologically determined this cleavage may be, we sociometrists can hardly be accused of not having tried to bridge it. Like Gurvitch many other sociologists have recognized the cleavage but they had no device by which to span it. It is exactly here where sociometry made one of its chief contributions. The study of immediate, interpersonal relations, the I and you, the you and I, was not sufficient for sociological requirements. In order to explore the "social group" a procedure was necessary which was able to go beyond the immediate situation. It is by the invention of the sociogram, as we can see clearly now, looking backward, that interpersonal theory was transcended. The forerunner of the sociogram was my interaction and position diagram (See *Das Stegreiftheater*, p. 87-95, with sixteen charts) which was apparently the first device consciously constructed for presenting, exploring and measuring social structures as wholes. Therefore, 1923 may be considered as the year when sociometry made its scientific debut.

The position of sociometry in relation to sociology has been put forth by me on many occasions, particularly in Volume 1, Number 1 of *SOCIOMETRY*, 1937. I never deviated from that position. While I was chiefly concerned with creating foundations which enable us to study collective phenomena in human relations systematically and accurately, I refused to be contented with elaborate reflections and sophisticated reveries about notions of collectivity, however noble, notions of legal, social or cultural Institutions, although I knew that I would have been in the good company of many distinguished sociologists. I decided to play with thoughts as little as possible but to *use my imagination to invent* socio-experimental procedures congruous for the task and see what happens in the course of their application.* My iconoclastic and neglectful attitude towards digni-

*See Zerka Toeman, "History of the Sociometric Movement in Headlines" elsewhere in this issue.

fied and perennial social concepts, as state, religion, family, law, was due to my conscious refusal to fall in line with the scholarly tradition (and with my own early preoccupation with axiological ventures of that type), but to find a new and more promising experimental approach in sociology, always in the hope that in the course of time sociometric research would justify my strategic suspension and throw some light upon what group, class and mass, law, religion and state really are. There can be no question that a logically coherent and consistent presentation of concepts is essential to any well balanced scientific system, but in an experimental and operational science as sociometry there is a logic inherent in the operations themselves which is able to clarify debatable issues, as for instance, when one definition of a concept at one time seems to contradict its definition at another time. What we actually *do* in the course of sociometric operations, sociometric test or sociodrama, defines and illustrates our terms and concepts and are able to an extent to make up for some inconsistencies or, at least, to correct perceptions coming from poorly worded definitions.

How do we proceed in sociometric research? First step—collection of data: "The responses received in the course of sociometric procedure from each individual, however spontaneous and essential they may appear, *are, materials only and not yet sociometric facts in themselves.*" Second step—two social inventions are introduced: the sociogram and the psychogeographical map. A sociogram plots all individuals related to the same criterion and indicates the relations they have to each other. "A psychogeographical map presents the topographical outlay of a community as well as the psychological and social currents relating each region within it to each other region" (see "Who Shall Survive?" p. 241). "The astronomer has his universe of stars and of the other heavenly bodies visibly spread throughout space. Their geography is given. The sociometrist is in the paradoxical situation that he has to construct and map his universe before he can explore it. The sociogram is . . . more than merely a method of presentation. It is first of all a method of exploration. It makes possible the exploration of sociometric facts. The proper placement of every individual and all interrelations of individuals can be shown on a sociogram. It is at present the only available scheme which makes *structural* analysis of a community possible." " . . . The sociograms are so devised that one can pick from the *primary* map of a community small parts, redraw them, and study them so to speak under the microscope. Another type of . . . secondary sociogram results if we pick from the map of a community large structures because of their functional significance, for instance, psychological networks. The mapping of

networks indicates that we may devise on the basis of primary sociograms forms of charting which enable us to explore large geographical areas." The matrix of a sociogram may consist in its simplest form of choice, rejection, and neutrality structures. It may be further broken up into the emotional and ideological currents crisscrossing these attraction and rejection patterns. The third step—study and discovery of social structures: "Once the full social structure can be seen as a totality it can be studied in minute detail. We thus become able to describe sociometric facts (descriptive sociometry) and to consider the function of specific structures, the effect of some parts upon others (dynamic sociometry)". We are now able to study interhuman phenomena on the sociological plane, on one hand removed from the limitations of the psychological plane, on the other hand not abstracted and distorted into generalized, lifeless mass-symbolic data. We may now try to discover the truly dynamic social structures which rarely become visible to the microscopic eye. "Viewing the detailed structure of a community, we see . . . a nucleus of relations around every individual which is "thicker" around some individuals, "thinner" around others. This nucleus of relations is the smallest *social* structure in a community, a *social atom*. From the point of view of a descriptive sociometry, the social atom is a fact, not a concept, just as in anatomy the blood vessel system, for instance, is first of all a descriptive fact. It attained conceptual significance as soon as the study of development of social atoms suggested that they have an important function in the formation of human society."

"Whereas certain parts of these social atoms seem to remain buried between the individuals participating, certain parts link themselves with parts of other social atoms and these with parts of other social atoms again, forming complex chains of interrelations which are called, in terms of descriptive sociometry, psychological *networks*. The older and wider the network spreads the less significant seems to be the individual contribution toward it. From the point of view of dynamic sociometry these networks have the function of shaping social tradition and public opinion."*

These are illustrations as to how primary social structure have been discovered, first descriptively, stimulating the construction of fruitful hypotheses. These discoveries have been made by means of what I have called structural or microscopic analysis. There are numerous discoveries still to be made. Unfortunately most researchers, using sociometric techniques have paid onesided attention to the choice-preference index* which is now so widely applied and so superficially from "How many dates do you have?",

*SOCIOMETRY, Vol. I p. 212-14 (1937).

"Who are your friends?", to asking children "Whom do you prefer, your father or your mother?" (exploring Freud's Oedipus hypothesis) frequently without mentioning the sociometric paternity. Without structural analysis of sociograms vital questions, as for instance leadership phenomena cannot be answered adequately. This onesidedness is unfortunate but understandable. Quantitative analysis of choices and rejections is easy and immediately rewarding. Structural analysis of sociograms and psychogeographical maps are painstaking, time absorbing and this the more so the larger the communities which are studied. They have to be studied at many and different points in time and space in order to learn how a community develops and spreads. Another onesidedness is the reduction of the sociometric test to a number of questions. Without the spontaneity and the warming up process of the total group to the problem they have in common sociometric tests become worthless. Similarly, a sociometric procedure, without observational, interview and follow up methods on the reality level is crippled, deprived of its meaning. Sociometrists, in order to attain the fullest usefulness of their instruments should combine sociometric tests on the choice and on the reality level with psycho-, socio-, and axiodramatic procedures and should always be ready to make modifications in favor of the community of people to which they are applied.

Sociometry aspires to be a science within its own right. It is the indispensable prologue and preparatory science for all the social sciences. It has several subdivisions like microsociology, microanthropology, microeconomics, microsociety, microecology and animal sociology. It is not merely a slogan indicating a special type of research, a single method or a number of techniques. Its present stage of development is still embryonic and scattered but there can be no question as to the potentialities of the new science. For the future progress of the social sciences it is of the greatest importance that a science of sociometry is set up and delineated, and its relation to other social sciences defined. Its range and boundaries, its operations and objectives are already more sharply visible than the same references in sociology or anthropology. It does not supplant and it must not overlap with anthropology or economics, for instance, but their findings on the overt, macroscopic level may receive a new interpretation from the point of view of sociometric research. An illustration for this is a recent work "Social Structure" by George P. Murdock (Macmillan Co., New York, 1949, p. 1-22). Dr. Murdock is a distinguished anthropologist who has

*A notable exception is Charles P. Loomis, see for instance "Sociometrics and the Study of New Rural Communities", *SOCIOMETRY*, Vol. 2, p. 56-76, 1939.

made a survey of two hundred and fifty human societies. In their analysis he distinguishes three types of family organization, the nuclear family, the polygamous family and the extended family. This may be so, but a sociometrically oriented microanthropologist, surveying the same two hundred and fifty societies may have added two distinct contributions to the strictly anthropological findings: a) the existence of "informal" group structures surrounding the official family setting like a social aura; b) the existence of "sub"-family forms of social organizations, forms of association including various individuals and structural relations but which may have never crystalized to become a "type", a legally sanctioned and respectable form of family. He may have suggested the hypothesis of a *universal sociometric matrix* with many varieties of structures underlying all known and potential family associations, an interweaving and crossing of numerous sociatomic and culturalatomic processes, but not necessarily identical with the family of one type or another as a social group. Indeed, the matrix, being full of cross currents, and contradictions may, because of its very essence, never be able to mature to a social institution. It is more strategic to explore living, instead of dead cultures and the study of our own culture should be carried out with the full participation of the people; they should not be treated as if they were half dead. The study of dead cultures themselves would gain considerably by their resurrection within a sociodramatic setting.

The Difference Between Sociometry and Anthropology

I am in full agreement with Gurvitch and von Wiese that the processes associating individuals and forming a social group are not of "an exclusively emotional character." (See Leopold von Wiese, elsewhere in this issue, p. 203.) I have repeatedly taken the position that emotional characteristics are only a part of the total social process, although crucial. May I quote here one of my early discussions of interpersonal relationships (in *Das Stegreif-theater*, p. 28-29) as follows: "Sie ist von allen Begriffen der Psychologie verschieden. Affekt sagt nicht dasselbe aus. Denn nicht nur Angst, Furcht, Zorn, Hass sind Lagen, sondern ebenso Komplexe wie Hoflichkeit, Grobheit, Leichtsinn, Hoheit und Schlaueheit oder Zustände wie Beschränktheit und Trunksucht. Auch Bezeichnungen wie Gefühl oder Zustand entsprechen nicht völlig, Denn mit Lage ist nicht nur ein innerer Vorgang, sondern auch eine Beziehung nach aussen gemeint—zur Lage einer anderen Person." (Translated: "It differs from all concepts in psychology. The term affection does not express it, because not only anxiety, fear, anger, hate can be contained in relationships, but also complexes as politeness, rudeness, levity, haughtiness and shrewdness, or conditions like mental inferiority and drunkenness.

Terms like feeling or condition do not cover the content of the relationship either, because with relationship not only an internal process is indicated but also a social, external relationship towards another person.")

A complete sociometric procedure may go down to the bottom of relations and may begin with mobilizing the choices and decisions, the attractions and repulsions, but it should never stop with this. It goes through several steps, up the ladder, exploring the motivations for these choices which may show up to be emotional, intellectual or "axionormative." It goes further and puts the individuals linked in social atoms through spontaneity tests which may show of what emotions an attraction or rejection consists. It goes further into role testing, psychodramatic and sociodramatic productions in the course of which the whole gamut of interhuman dynamics comes to the fore. Of particular importance should be to anthropologists the concept of the cultural atom which is an essential part of my role theory. The role theory which I have introduced into literature independent from G. H. Mead and, whereas the philosopher Mead never descended from the lofty levels of speculation and observation, we provided role theory with experimental methods and empirical foundations.

The Difference Between Sociometry And Axiology

I am in full agreement with Gurvitch and Zazzo as to the need of integrating the "we" feeling, the concepts of community and communion into the sociometric framework. The rapidly growing use of psychodrama and axiodrama in departments of theology and the wide interest they arouse in religiously oriented cooperatives speaks for itself. I am fully aware, however, that there is a long way from the practical use of a method to its scientific integration.

Sociometry and the Doctrine of Spontaneity

I am in full agreement with Sorokin that the concept of spontaneity (s)-creativity (c) is in need of further elucidation. I never contended that spontaneity and creativity are identical or similar processes. They are indeed different categories, although peculiarly linked. In the case of Man his *s* may be diametrically opposite to his *c*; an individual may have a high degree of spontaneity but be entirely uncreative, a spontaneous idiot. Another individual may have a high degree of creativity within a limited area of experience but may be capable of spontaneity only in reference to this area; he may be incapable or little able of spontaneity in other areas. God is an exceptional case because in God all spontaneity has become creativity. He is one case in which spontaneity and creativity are identical. At least,

in the world of our experience we may never encounter pure spontaneity or pure cultural conserves, they are functions of one another. A cultural conserve, for instance, a musical or a drama conserve needs some degree of spontaneity and warming up in order to produce an adequate response and performance within a social setting. On the other hand an extemporaneous producer cannot help but relate himself to cultural clinches, even if it means that he tries to deconserve them. Spontaneity and the warming up process have no premiums for extraverts, they are equally pertinent to introverts. They operate on all levels of human relations, eating, walking, sleeping, sexual intercourse, social communication, creativity and in religious self realization and asceticism.*

Summary

The great problem which the western civilization in the twentieth century faces is that after having driven people out from the protective walls of strong and cohesive religious systems, it is anxious to replace them by strong and cohesive secular systems—with the aid of science. The difficulty is that science, especially social science progresses slowly. Then, scientific hypotheses vary and often contradict one another. The automatic safety of the autocratic systems is not easily replaceable, but what is worse, there is no hope, no guiding star given to mankind by science. What people see is, parallel with the ever-new emergence and accumulation of technological gadgets, the ever-new announcements and accumulations of social research techniques *without any over-all vision as to how these millions of little items may ever fit into a single mosaic*. This is a great but tragic sight, a wide spread of spontaneity and creativity emanating from thousands of fine minds, each trying to help by making their contributions, but because of continuous contradictions they increase the confusion of values. Doubt rises in the hearts of men that they may have escaped from a prison but landed in a jungle of scientific trappings. Faith in science begins to wane in many places because it does not keep the promises it has made. But science is neutral, it is knowledge, it cannot save by itself. The title of George A. Lundberg's recent book "Can Science Save Us?" may have to be reversed into "Can Science Be Saved?" It will be crippled or perish if it cannot create the foundations of a new social order. It can be saved if the

*I wish I could answer the brilliant and challenging comments of Sorokin more completely in this paper especially as to the relationship of spontaneity to energy, but I refer the reader to my paper "The Doctrine of Spontaneity-Creativity" which will appear in a symposium edited by Pitirim A. Sorokin and to be published in the course of 1950 by the Harvard University Press.

responsible domain of social science is further extended to include the immediate and practical structuring and guidance of present day human society on all its levels from the physical up to the axiological plane. This job may have to begin with "burying the dead", cleaning up our research shelves and laboratories, and concentrating all our efforts upon a few strategically selected points. The weakest spot in the armor of present day society and culture is its ignorance of its own social structure, especially of the small local structures in which people actually spend their lives. The time has come, after twenty-five years of research in "catacombs", as prisons, hospitals, reformatories, schools, that sociometry moves from the closed into the "open" community. It is essential therefore, that we move "fearlessly", armed with powerful and dynamic social inventions into the midst of every town, every region, county and state and dare to shake them out of their dreams of individual psyche existence. Only by means of such practical, direct and immediate demonstrations of the usefulness of the social sciences can the faith in science be regained and cemented. Only by such means can science be saved and put to full use. With the cooperation of "all" the people we should be able to create a social order worthy of the highest aspirations of all times. This, and this alone is the meaning of revolutionary, dynamic sociometry.

HISTORY OF THE SOCIOMETRIC MOVEMENT IN HEADLINES

ZERKA TOEMAN

Sociometric Institute

The history of the sociometric movement falls naturally into three periods: (a) the period during which Moreno lived in Europe and was the only writer on the subject, preparing the foundations for inter-personal theory and the experimental study of small groups, from 1905-1925; b) the period during which he lived in the United States and found here a growing number of collaborators and co-creators in the development of sociometric theory and practice, from 1925 to 1941; c) the period during which sociometry and sub-disciplines came to be generally accepted and universally applied, from 1941 up to the present.

Moreno is the founder of sociometry, psychodrama and group psychotherapy. But it may well be that he will be longer remembered as the creator of social inventions without which these new disciplines might never have reached the scientific stage. He invented the *open, multidimensional, circular stage*, without being an architect. He invented the *living, dramatized newspaper*, without being a newspaper man; he brought it to the United States in 1925 and the idea reached, through the March of Time, the newsreel and W.P.A., wide popularity. Only a few scientific writers are aware that it was first introduced by Moreno in Vienna in 1924, as an aftermath of the Theatre of Spontaneity. He invented the electric "*psycho-recording*," the idea of transcribing and "playing back" sound phenomena for exploratory and therapeutic aims. Moreno proposed this idea since 1925, particularly in his "Application of the Group Method to Classification," 1931, and has been for years its persistent advocate. Psycho-recording is now universally applied and has become an almost indispensable tool in the hands of the psychotherapists. Non-directive counselors, psychoanalysts, group psychotherapists, and so forth, are using it, especially since 1941. He invented among many other procedures the *sociogram*, *psychodrama*, *sociodrama*, and the *psycho-therapeutic motion picture*. These inventions have one thing in common, their artistic character of conception, initiating a new era in the development of the social sciences, the arts coming to their rescue and aiding towards a synthesis.

FIRST PERIOD, 1908-1925

- 1908-1912 Group psychotherapy applied to children, Vienna.
- 1911 Theatre of spontaneity for children, Vienna.
- 1913-1914 Group psychotherapy applied to deviates, Vienna.
- 1914-1924 Development of inter-personal theory.
- 1916 Letter to the Department of the Interior, Austro-Hungarian Monarchy, suggesting a sociometric scheme for reorganization of Mitterndorf, a resettlement community near Vienna. The term "sociometry" used for the first time.
- 1921 Psychodrama at the Komoedienhaus, Vienna, the first large scale public session.
- 1922 Opening of the Stegreiftheater (Theatre of Spontaneity) in Vienna. Invention of the inter-action diagram.
- 1923 "Das Stegreiftheater", a publication. It opened the way for sociometric study of group structure as a whole, spontaneity-research, role-research, and action-research.
- 1924 Die Lebendige Zeitung (The Living Newspaper), Vienna.
- 1925 First exhibit of the multi-dimensional, circular stage at the Internationale Ausstellung Neuer Theater Technik (International Exposition of New Theatre Technique) inaugurated by the city of Vienna.
- 1925 Invention of the electro-magnetic recording disk which led to the idea of psycho-recording.

SECOND PERIOD, 1925-1941

- 1925 Plymouth Church, Brooklyn, N. Y. Psychodrama applied to a Sunday school; demonstration of psychodrama at Mount Sinai Hospital, Department of Pediatrics.
- 1929-1930 Impromptu Theatre, Carnegie Hall, combining group psychotherapy with psychodrama sessions. Among its visitors were many who later applied psychodrama and group psychotherapy to various social situations.
- 1931 The National Committee on Prisons and Prison Labor convenes during the meeting of the American Psychiatric Association in Toronto. Moreno suggests program on Group Psychotherapy for prisons, mental hospitals, and schools.
The Living Newspaper presented at the Theatre Guild.
Sociometric Study at Sing Sing Prison. Invention of the sociogram.

- 1931 Publication of the "Application of the Group Method to Classification." Coining of "Group Therapy" and "Group Psychotherapy."
- 1932 First Round Table Conference on Group Psychotherapy during the meeting of the American Psychiatric Association in Philadelphia, with William A. White, M.D., as moderator, who had shown interest in Moreno's inter-personal theory since 1929. Group psychotherapy, sociometry, and role-playing are discussed.
- 1932-1938 Long range sociometric study at the New York State Training School for Girls, Hudson, New York, in collaboration with Helen H. Jennings.
Sociometric study of a complete public school. P. S. 181, Brooklyn, N. Y., in collaboration with Helen H. Jennings.
- 1933 Exhibit of over 100 sociometric charts at the meeting of the Medical Society of the State of New York, held in New York City. "Psychological Organization of Groups in the Community," an experimental study of small groups, paper read by J. L. Moreno during a joint meeting of the American Association for Mental Deficiency and the American Psychiatric Association, at Boston.
- 1934 "Who Shall Survive? A New Approach to the Problem of Human Interrelations," by J. L. Moreno, with a Preface by William A. White. Covering dimensions of community organization, especially home and industrial relations.
- 1935-1936 U. S. Department of Agriculture and Department of Interior sponsor sociometric research related to subsistence homesteads. Showing of the therapeutic film, "Spontaneity Training," during the meeting of the American Psychiatric Association at Washington, D. C.
Development of social microscopy and microsociology, dynamic sociometry, sociodynamics and role playing.
- 1936 Publication of the *Sociometric Review*, containing among other articles, Dr. Winifred Richmond's sociometric research at St. Elizabeths Hospital, Washington, D. C., and studies of laissez-faire, authoritarian, and sociometric structure of groups, initiating group atmosphere exploration—since then widely treated and discussed.
- 1936 First Theatre of Psychodrama, Beacon, N. Y.

- 1937 Founding of *SOCIOMETRY: A Journal of Inter-Personal Relations*, first scientific journal bearing this title; editor, Dr. Gardner Murphy.
- a) inter-personal influence and public opinion research (Moreno, Lazarsfeld)
 - b) sociometry and socioeconomic status (Lundberg)
 - c) sociometry and leadership (Jennings)
 - d) sociometry of race cleavage (Criswell)
 - e) sociometric analysis of resettlement (Davidson and Loomis)
- 1937 Round Table Conference on Sociometry held during the meeting of the American Sociological Society, at Atlantic City, N. J.; moderator, Dr. George A. Lundberg.
- 1938 Sociometry in a Cooperative Community, Hightstown, N. J.
- 1941 Theatre of Psychodrama at St. Elizabeths Hospital, Washington, D. C. (Dr. Winfred Overholser, Margaret Hagan).
- 1941-1945 Recognition of group psychotherapy and psychodrama by the United States in War Department, Technical Bulletin 103 and War Department Bulletin TBMED84.
- 1941 Founding of a publishing house, Beacon House, for sociometric books and monographs.
- 1942 Founding of Theatre of Psychodrama, Psychodramatic Institute, Sociometric Institute, New York City.
Introduction of *action* research methods, techniques, tests, and practice.
- 1942-1944 Sociometric selection methods in the British Army.
- 1944 Psychodrama applied to alcoholic problems.
- 1944 Audience research and role analysis (Toeman).
- 1944-1947 Psychodrama: Psychodramatic Institute, Denver University.
- 1945-1946 Founding of the American Sociometric Association.
- 1946-1948 Initiating of psychodrama and role-playing in Veterans Hospitals: West Brentwood, Los Angeles; Lyons, New Jersey; Winter General Hospital, Kansas; Little Rock, Arkansas, etc.
- 1947 Pastoral psychodrama, pastoral group psychotherapy: Department of Theology, University of Chicago; Church of the Brethren, Illinois.
- 1947 Psychodrama at New York University and U. C. L. A.
- 1947 Founding of *Sociatry: A Journal of Group and Inter-Group Therapy*.
- 1947 Psychodrama in France.

- 1948 Sociometric Institute, Paris.
- 1949 Sociometric anthropology (French Oceania).
- 1949 Psychodramatic anthropology (Eskimo, Alaska).
- Convention of the American Sociometric Association, New York.
- A. S. A., Member of the World Federation for Mental Health.
- Spontaneity research in Parapsychology (C. C. N. Y.).
- Psychodrama in Prisons (San Quentin, California).
- Spontaneity Theatre and Psychodrama at Boston Psychopathic Hospital.
- Theater of Psychodrama, Harvard University, Henry A. Murray, Director.
- Psychodrama at the Mansfield Theater, New York City. Psychodramatic Directors: Anthony Brunse, M.D., James Enneis, Ernest Fantel, M.D., Robert B. Haas, Helen H. Jennings, Leona M. Kerstetter, J. L. Moreno, M.D., Justus F. Randolph, III, Zerka Toeman.

ANNOUNCEMENTS

American Sociometrist 1949

This publication, edited by Charles P. Loomis is now in press.

Who Shall Survive?

A new, anniversary edition of the book by J. L. Moreno will be available in Spring, 1950.

A French translation of the book by Professor P. Maucorps with an introduction by Professor Georges Gurvitch is to be published by the Presses Universitaires, Paris.

A German translation, with an introduction by Professor Leopold von Wiese, is now in preparation.

The Theatre of Psychodrama

During the 1949-1950 season, commencing on November 20, 1949, the Psychodramatic Institute will present twenty-seven productions, every Sunday evening at 8:40 P.M. at the *Mansfield Theatre*, 256 West 47th Street, West of Broadway, in New York City.

Problems of world-wide significance will be dramatized and the aid of audience participation as they bear dynamically upon each individual and upon every group. Each participant can make a personal contribution towards the meaning and total effect of a production.

These productions are entirely spontaneous and unrehearsed, creations of the moment, resulting from the interaction between the stage and the audience.

American Sociometric Association

Member of World Federation of Mental Health. Annual meeting, December 29-30, 1949, at the Hotel New Yorker.

Research Centers of Psychodrama:

University of Oklahoma; Kansas State College; University of Michigan;

And among the more recent centers of research, the following:
Psychological Clinic, George A. Kelly, Director, Department of Psychology, Ohio State University, Columbus 10, Ohio. Studies in the psychodynamic aspects of psychodrama are carried out in connection with the training program in Clinical Psychology at Ohio State University. Both formal instruction in the technique of group psychotherapy, including psychodramatics, and research direction are provided.

Institute of Personality Assessment and Research, Donald W. MacKinnon, Director, Department of Psychology, University of California, Berkeley 4, California. Research using psychodrama and situation-testing. The Institute is established to conduct basic research into the development and organization of personality through the assessment of individuals in a variety of fields and especially of persons applying for admission to professional schools of the University. Staff: Donald W. MacKinnon, Director; R. Nevitt Sanford, Associate Director; Erik H. Erikson, Harrison G. Gough, and Robert E. Harris, Research Associates; and Francis X. Barron and Ronald Taft, Research Assistants.

Department of Home Economics, Clara Tucker, Head, Louisiana State University, Baton Rouge, Louisiana. Research using psychodrama and sociodrama in Home Economics Education and Family Relations.

Department of Education, Rutgers University, New Brunswick, N. J., Max Birnbaum. Research in teacher training, using sociometric and sociodramatic techniques.